approach

JULY 1982 THE NAVAL AVIATION SAFETY REVIEW

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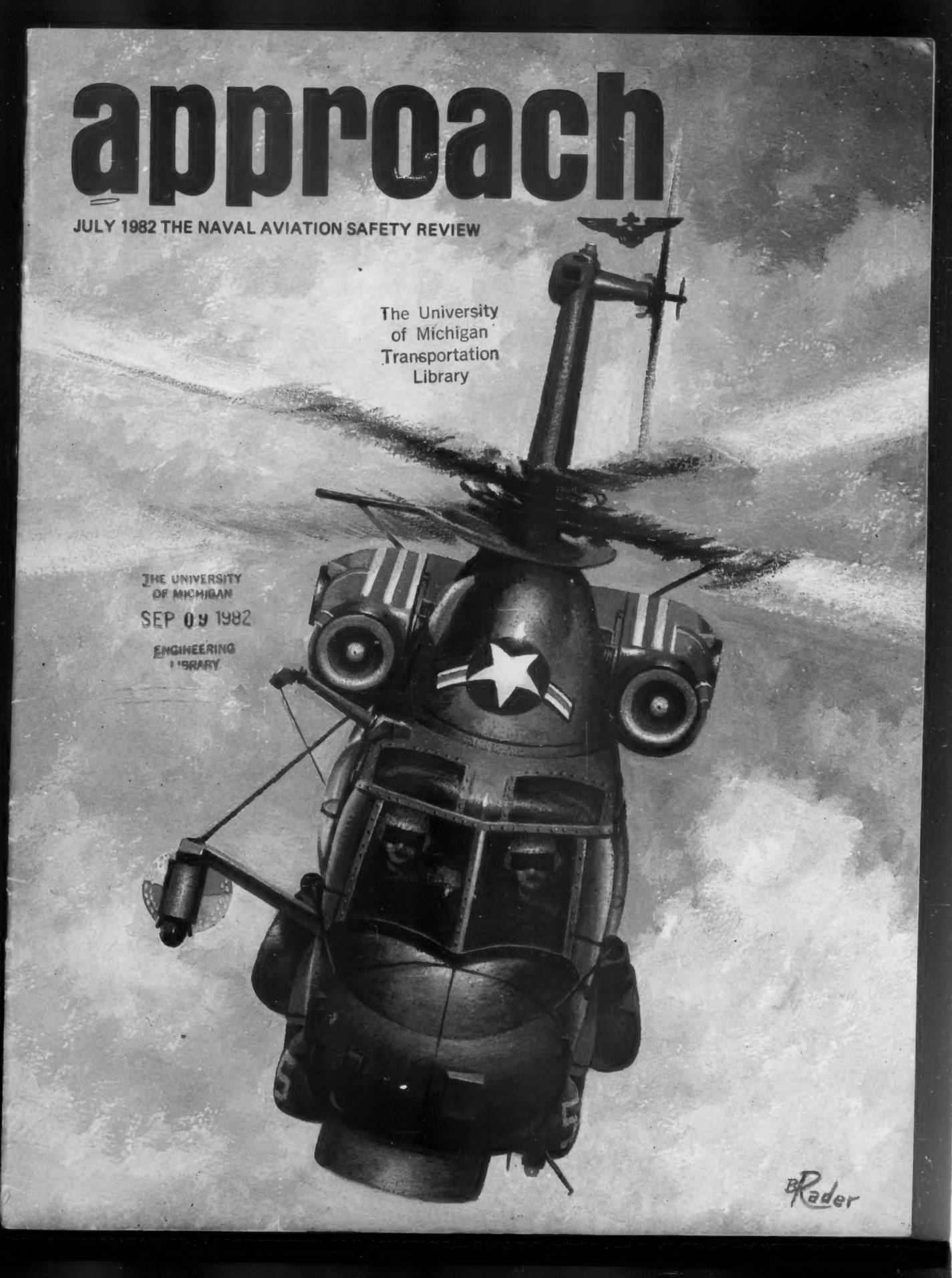

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B Rader

Rotary Mower
NATOPS

It's a day like any other day at MCAS *Toro.* The weather's CAVU, and preflight, brief, and man-up go uneventfully. Soon, your rotor engages and accelerates into a reassuring whir.

Mission? Today, it's a solo, to be flown nap-of-the-earth. Finally, after setting the engine condition levers, you roar up into the bright, Kentucky-green sky.

Green?

Now wait a minute, you're not doing a wingover with that *Lawn Boy,* are you, Mr. Naval Aviator, sir? What's your maximum angle of bank on that hummer? Somebody ought to take down your tail numbers!

It may be an anticlimax to descend from your war chariot and drive home to start on your lawn with a "harmless" piece of domestic equipment, but summer is here, and a review of rotary mower NATOPS (No Amputated Toes Or Phingers Safety) is in order. Let's go over the PCL (Pusher's Checklist):

- The first item on the checklist is a thorough FOD walk-down. Keep your eyes open for stones, wire, glass, beer can poptops, and any other missile hazards or blade chippers.
- Conduct a thorough preflight of the machine. Check all systems – oil, fuel, sparkplug, muffler, filter, and blades.
- Before start, make sure kids are clear of the turnup area.
- Make sure you're wearing proper survival gear. Use safety shoes if possible (don't operate barefoot), and consider eye protection.
- Keep in step with the mower – you control it, don't let it control you.
- Watch those ridge lines – the steeper the slope, the more care required. Parallel the ridge line, don't try to climb straight over it, especially when operating IMC in precipitation. Never operate an electrical mower during IMC conditions – it could be a shocking experience.
- Too much rotor blade speed can be dangerous – don't overspeed the engine by tampering with the governor.
- Know your emergency procedures – how to disengage the clutch, go to idle, or shut down the engine.
- Always secure the engine when leaving the machine unattended.
- Quick-disconnect the power (sparkplug wire) when maintenance or blade unclogging is required.
- Never refuel the machine when hot (the machine, that is). When you put it in the hangar, ensure it's in a dry, ventilated area.

Properly following the mower safety checklist is a rather simple operation, but every year, thousands of mower fliers are injured because they don't go by the book. Make rotary mower NATOPS a way of life and limb. Your lawn will be better maintained, and you'll end up with all your fingers, toes, and maybe some other things.

—Russ Forbush

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approach

Vol. 28 No. 1

NAVAIR 00-75-510

"Easyrider 55" is definitely inbound. From a photo by LCDR M. W. Skahan, HSL-37. Painting by Blake Rader.

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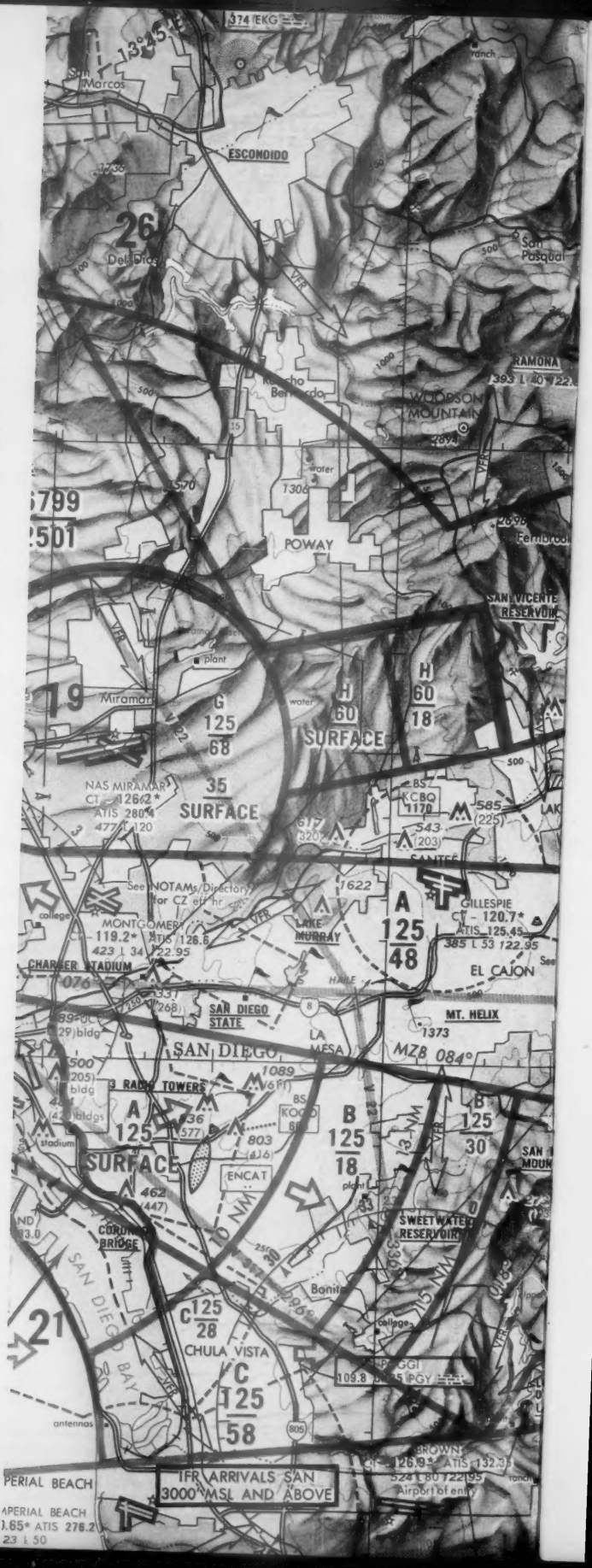
Close encounters in special use airspace

By CDR Billy G. Moore, USN
Naval Safety Center
NMAC Analyst



AS the Naval Safety Center's analyst for near-midair collision (NMAC) incidents, I often see close encounters involving tactical military and light civilian aircraft. Many NMAC situations occur in *special use airspace* in which both the military and civilian pilot are performing "routine" flight evolutions and are both within legal bounds. In an attempt to improve this situation, I'd like to review the airspaces where the interface between tactical jet aircraft and transiting civil aircraft imposes a severe hazard. Additionally, I'll include several NMAC report narratives to illustrate the hazardous situations occurring in the vicinity of high-speed tactical aircraft. Hopefully, the incidents described will awaken both general aviation pilots and naval aviators to the NMAC potential present in special use airspace. This article will also be appearing in several FAA publications.

Military Operations Area (MOA). An airspace assignment of defined vertical and lateral dimensions established outside positive control areas to separate certain military activities from IFR traffic and to identify VFR traffic where these activities are conducted.

Generally, MOAs are established near military airfields around which intensive flight training is the primary mission and the density of civil air traffic is slight, thus ensuring minimal disruption. An MOA is defined on aeronautical charts with specific boundaries, altitudes, and hours of operations depicted. Additionally, the phrase "contact nearest FSS" always appears within the boundaries of the MOA. The intent is that all air traffic transiting the MOA during the active operating times (or additional operating hours as posted in NOTAMs) contact the nearest flight service station (FSS) for advisories concerning possible hazards to flight.

A recent incident involving a light civilian twin-engine aircraft crossing an MOA illustrates the dangers awaiting the aviator who, feeling secure in his special use airspace, throws caution to the wind. The civilian pilot was flying an IFR flight plan and requested clearance through an active MOA. Due to intensive jet training in the MOA, Center denied the request for IFR transit. The pilot then cancelled his IFR flight plan and started through the MOA under visual flight rules. Center advised him of a flight of Navy jet aircraft in his path. The civilian pilot never saw the traffic.

What was happening with the Navy's tactical jet aircraft as the light twin calmly transited the MOA? The Navy aircraft were involved in an air combat maneuvering engagement. A near-midair collision report filed by one of the Navy pilots revealed the horror that the civilian pilot never witnessed. Fortunately, a wingman sighted the light twin approaching the intended flightpath of his maneuvering playmate and called for immediate evasive action. The timely warning enabled the Navy pilot, who was maneuvering with 60 to 75 degrees nose down, 70 degrees angle of bank, and 320 knots of airspeed, to level his wings and pull out prior to a midair collision. The estimated minimum separation was 500 feet directly above the unsuspecting civilian pilot.

Once through the MOA, the civilian pilot made a request to Center for resumption of his original IFR clearance. The obvious hazard of flying through an active MOA was totally missed by the pilot, who was content with having saved a few minutes of flight time. The commanding officer for the Navy aircrews involved made the following comment concerning this disconcerting incident: "Although the civilian pilot's actions were not good common sense, nonetheless, they were legal. We must constantly remind users of special use airspace that such events can and do happen. The point was tragically brought to light recently when a Naval aircraft collided with a light civilian aircraft in a restricted target area. No airspace is immune from purposeful or accidental violation by military or civilian aircraft. No amount of control or preservation of airspace can replace adequate lookout doctrine."

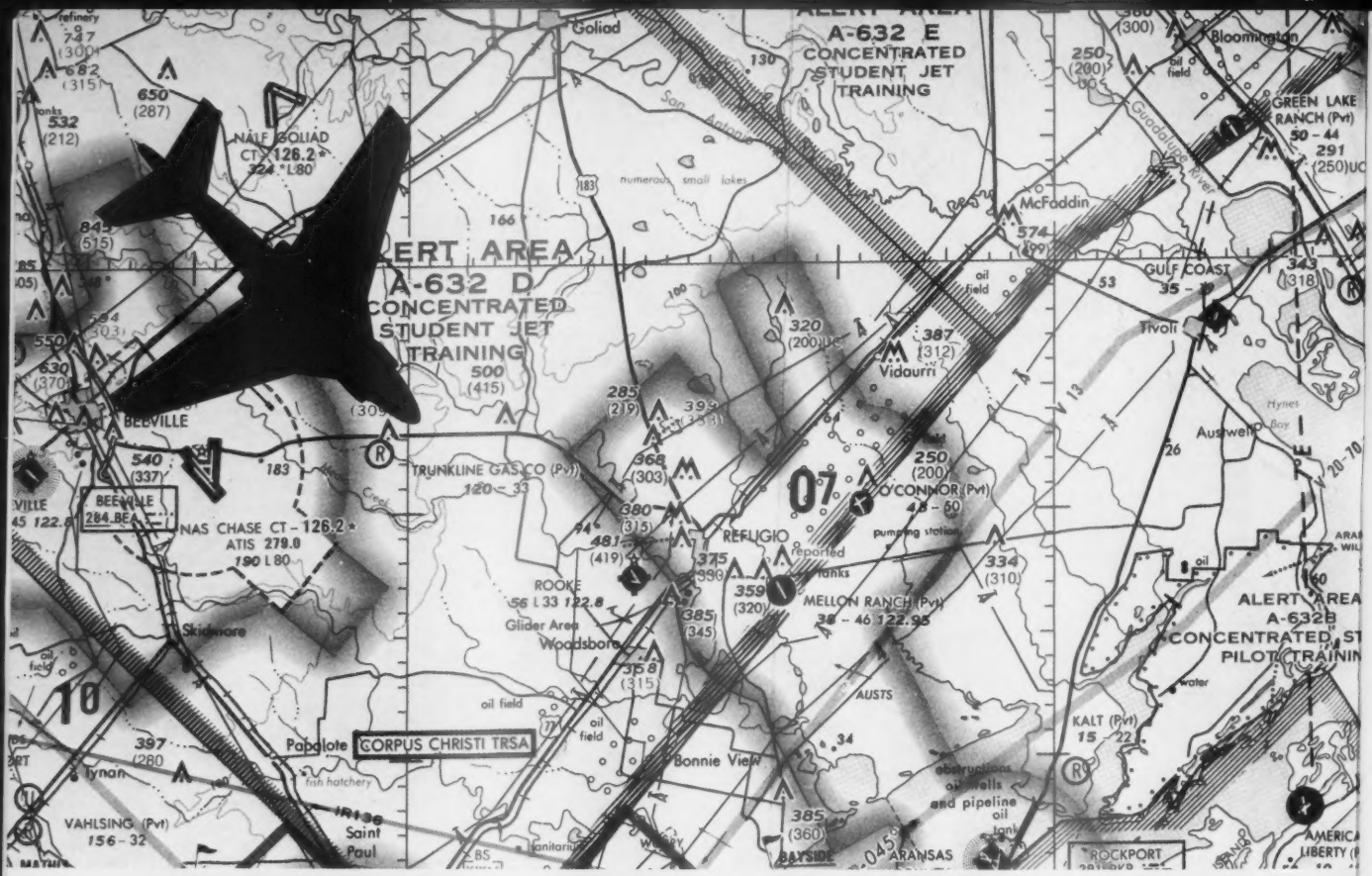
Other special use airspaces where high-performance jet operations are common present similar hazards to both military and general aviation. A brief review of these airspaces may be beneficial. In addition to the MOA, special use airspaces are designated as follows:

Alert Area. An airspace which may contain a high volume of pilot training activities or an unusual type of aerial activity, neither of which is hazardous to aircraft. Alert Areas are depicted on aeronautical charts for the information of nonparticipating pilots. All activities within an Alert Area are conducted in accordance with Federal Aviation Regulations, and pilots of participating aircraft as well as pilots transiting the area are equally responsible for collision avoidance.

Controlled Firing Area. An airspace wherein activities are conducted under conditions so controlled as to eliminate hazards to nonparticipating aircraft and to ensure the safety of persons and property on the ground.

Prohibited Area. A designated airspace within which the flight of aircraft is prohibited. (Refer to en route charts.)

Restricted Area. An airspace designated under FAR Part 73, within which the flight of aircraft, while not



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wholly prohibited, is subject to restriction. Most restricted areas are designated joint-use, and IFR/VFR operations in the area may be authorized by the controlling ATC facility when the area is not being occupied by the using agency. Restricted areas are depicted on en route charts. Where joint use is authorized, the name of the ATC controlling facility is also shown.

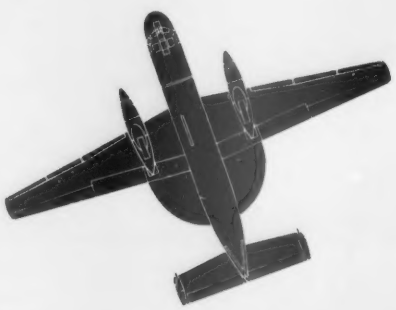
Warning Area. Airspace which may contain hazards to nonparticipating aircraft in international airspace.

Another area where close encounters often occur is on the Military Training Routes (MTR) that crisscross the country. The general aviation pilot may not be familiar with these routes, where military high-speed, low-level navigation training is conducted. The flight planning phase is an excellent time to identify the MTRs that cross the proposed flight route. MTRs are published as follows:

IFR En route Low-Altitude Charts and Associated Wall Planning Chart. Depict all IFR and those VFR MTRs that accommodate operations above 1,500 feet AGL.

VFR Sectional Aeronautical Charts and Associated Wall Planning Chart. Depict all areas of military training activities, regardless of altitude parameters.

DOD Flight Information Publication (FLIP) AP/1B and AP/3. These publications, furnished by the DOD, are primarily for military users and contain detailed information on MTRs.



When use of an MTR is planned, area flight service stations are advised and will provide, upon request, information concerning the activity along an MTR.

A recent incident on an MTR highlights the potential hazard to aviation present along these often-ignored airways. A Navy attack aircraft was established VFR on an MTR at 500 feet AGL and 420 knots when a *Cessna* 172 was first sighted 200 yards ahead, crossing very slightly above the projected flightpath. The light-colored *Cessna,* against a light background, was very difficult to distinguish. The high-speed jet initiated an immediate noseover and passed 150 to 200 feet directly below the *Cessna*, which took no evasive action. In the NMAC report of the incident, the commanding officer

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recommended a joint military/FAA program to provide general aviation pilots with information concerning the hazard of flying in the vicinity of MTRs. Especially hazardous is flight at 500 feet AGL near the routes without coordination with a local FSS to advise of scheduled low-level training flights. Five hundred feet AGL is a Navy minimum and is an often used altitude on the low-level, high-speed VFR MTRs. Additional comments focus attention on the seriousness of the midair collision dangers related to MTR flying:

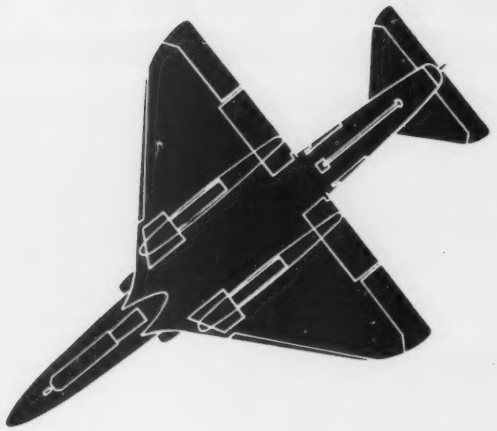
> "The potential for disaster in this incident may be high if one fails to realize the extremely critical distance and speed involved. A small aircraft was first sighted at two football field lengths by a pilot traveling in excess of 700 feet per second. There was less than 1 second to react for avoidance of the imminent collision; extraordinary vigilance is mandatory on all low-level missions."

Two final areas of high potential for midair collision are in the approach and departure corridors of busy military jet bases. Few master jet bases are afforded the protection for arriving and departing flights that most major commercial airports receive under the umbrella of a Terminal Control Area (TCA). Within a TCA, all flights must have Air Traffic Control (ATC) authorization for operation and meet certain other communication, navigation, and identification criteria.

Since establishment of a protective TCA is based on actual passenger use, no military air station can meet the criterion for establishment of a TCA. Only a few military fields are located adjacent to major civil fields and receive the partial benefits of being on the fringe of a TCA. Many military air stations conduct double or triple the number of flight operations that a civil field with a TCA will have and receive only the protection afforded by a Terminal Radar Service Area (TRSA). In the TRSA, ATC provides radar vectoring, sequencing, and separation on a full-time basis for all IFR and *participating* VFR aircraft.

The hazard of the TRSA rests on the key word, "participating." If a VFR pilot elects to fly through a TRSA without "participating" in the radar and flight following services provided by ATC, then a very real threat to aviation safety exists as the VFR aircraft crosses congested approach and departure corridors. Several recent NMAC reports in the approach corridor to a master jet base have cited close encounters with light aircraft that were actually performing aerobatics in the corridor while using the conveniently-located coastline as a geographic reference.

Typical of the NMAC reports that have become "routine" at a military field TRSA is the following incident. A flight of two tactical jet aircraft in the approach corridor (within the TRSA) at 240 knots had just separated to commence individual visual approaches to the field. As the wingman was separating from the flight leader, he sighted level traffic at an estimated 1,000-feet ahead and immediately called, "Pull up," as a warning to the flight leader. As the leader applied back stick to climb, he saw the light, single-engine aircraft less than 100 feet directly below. No evasive action by the light aircraft was observed. This type of incident has become frighteningly common, particularly in the vicinity of MCAS El Toro, California.



A publication that can provide essential information to the pilot planning a flight in the vicinity of selected congested military or civil aerodromes is *Graphic Notices and Supplemental Data*, issued by the U. S. Department of Transportation. One section of *Graphic Notices*, "Terminal Area Graphic Notices," provides a number of graphics showing areas of concentrated traffic for the information and guidance of pilots operating VFR in the terminal areas depicted.

All pilots realize the midair collision potential in congested areas. Additionally, the hazard is significant in airspaces where dissimilar aircraft are performing incompatible missions, e.g., a light *Cessna* and a military fighter performing, respectively, routine transit and air combat maneuvering. Aviators, both civilian and military, can reduce the probability of a midair collision by applying a few basic preventive measures.

- During flight planning, consider the special use airspace, TRSAs, and MTRs that will be encountered en route; check NOTAMs.
- For VFR flights entering TRSAs, plan to communicate with ATC and request flight following.
- Illuminate the landing/taxi lights while transiting the congested area.
- Coordinate crossings of MTRs with the area FSS.
- Maintain a constant lookout doctrine while flying in visual conditions under either VFR or IFR and whether under positive control or not.
- Maintain a precise altitude that is appropriate for the direction of flight.
- Ensure that windscreens are clean and clear of all obstructions to visibility.

Most important, aviators cannot, even temporarily, neglect the lookout doctrine. The "big sky" theory of collision avoidance has repeatedly been shown to be invalid. A pilot must fly defensively at all times; to do less is to invite disaster.

Skyhawk **Without Chute Departs Runway.** At the end of a cross-country flight, a TA-4 pilot made a circling approach to minimums and broke out in VFR conditions. There were heavy rainshowers at the field. He circled the field and requested clearance to land. After touching down on its first approach, the aircraft was slow to decelerate due to hydroplaning, and the pilot waved off the landing. On his second approach, the pilot overshot the centerline and again waved off. The third attempt was identical to the first and resulted in another go-around. When he touched down on his fourth approach, the pilot felt that deceleration was normal. Still, he encountered hydroplaning, which negated normal braking action, and the drag chute-configured TA-4 screeched past the end of the runway. It continued 300 feet into no-man's-land, where it remained upright after shearing the nose gear.

Although the pilot recognized that hydroplaning would probably occur on landing, he failed to deal with it satisfactorily on his landing attempts. He felt that the adverse braking encountered on his first two landings resulted from less than optimum touchdown speed and poor positioning of the TA-4 on the runway. The pilot felt that the third landing was properly executed. He did not consider diverting to an alternate airfield rather than attempting a full stop landing under the existing adverse conditions. Finally, the pilot failed to use the (specially installed) drag chute on his landing. Had he used the chute, the aircraft would probably have been successfully stopped on the runway.

Heads Up Vice Heads Off. Near-midair collisions are on the rise, and it's time to once more reiterate the importance of seeing and avoiding by maintaining a stringent lookout doctrine. The near-midair described below is an excellent example of an aircrew being alert and avoiding what surely could have been a disaster.

A P-3C was in the NAS West airport traffic area, under radar control. While descending through 6,800 feet MSL on a downwind for a GCA to Runway 31, the PPC was forced to take evasive action to miss hitting two parachutists. The estimated closest point of approach to the two civilian jumpers was 75 feet and 150 feet, respectively. NAS West ATC was immediately notified, and they initiated flight violations against the *Cessna 172* that dropped the chutists and the two parachutists themselves for flouting Part 105 of FAR (operating within a control zone and controlled airspace).

At the time of the incident, two aft observers were posted in the P-3, in addition to the three primary flightcrew members. An off-duty pilot was also maintaining a lookout in the flight station. Had this crew not been on their "eyes," a certain collision would have occurred, resulting in loss of life and possible loss of the aircraft.

This is another example of a professional, alert flightcrew with a diligent lookout plan avoiding what would have been a very tragic midair collision. Do we need more proof that being under positive control does not relieve a pilot or aircrew from keeping a vigilant lookout for other traffic, whatever it may be?

Three Cheers for the Volunteers. On a quiet Sunday morning at NAS Lemoore, LT Kurt Bierkan and another pilot volunteered to fly a Fam 1 for a new nugget in the UH-1N. LT Bierkan conducted a thorough brief and preflight, took off, and proceeded to the Fam area. For an hour, normal approaches, sliding landings and takeoffs, and low work were demonstrated by both pilots.

While performing a steep approach on final at 150 feet and 40 knots, the crew heard a loud, continuous rumble

AIR BREAKS

aft and noted rapidly decaying N_f on the No. 2 engine. LT Bierkan quickly stabilized collective to maintain N_r and chose a landing area straight ahead. A smooth, single-engine, run-on landing was accomplished as the No. 2 engine failed completely. He immediately secured the No. 2 throttle and fuel, and after noting performance indications, he secured the other engine.

A maintenance crew later discovered that a catastrophic internal failure of the No. 2 engine had sheared the oil cooler driveshaft on that engine, causing the No. 1 blower cooler fan to erode. This contaminated the combining gearbox as well. Continued flight in this configuration could have been very short, with dual engine failure and/or fire a distinct possibility.

LT Bierkan's cool headwork and expert airmanship resulted in the safe recovery of a seriously damaged aircraft. Three cheers and an Attaboy to LT Bierkan for a job well done.

Special Delivery. A pair of carrier-based A-7E pilots were scheduled for a close air support (CAS) training mission. This would be the wingman's first heavy ordnance flight since joining the squadron 7 weeks earlier. Each aircraft was configured with eight Mk-82 *Snakeyes* (on three parent rack stations and two TERs) and a droptank on Station 6.

During the well-conducted preflight brief, the lead specified that in the target area, each aircraft would leave the initial point (IP) separately to reach the target, based on a time provided by the FAC. Both pilots were to perform two pop-up deliveries in order to expend all ordnance.

After the lead made his first run and released four of his eight bombs, he advised his wingman to release all his ordnance in one run due to other aircraft holding for ingress into the target. The wingman performed his ingress from the IP to the target and made a pop-up delivery as briefed. Pulling off target, he noticed that he had one bomb remaining on the TER on Station 2.

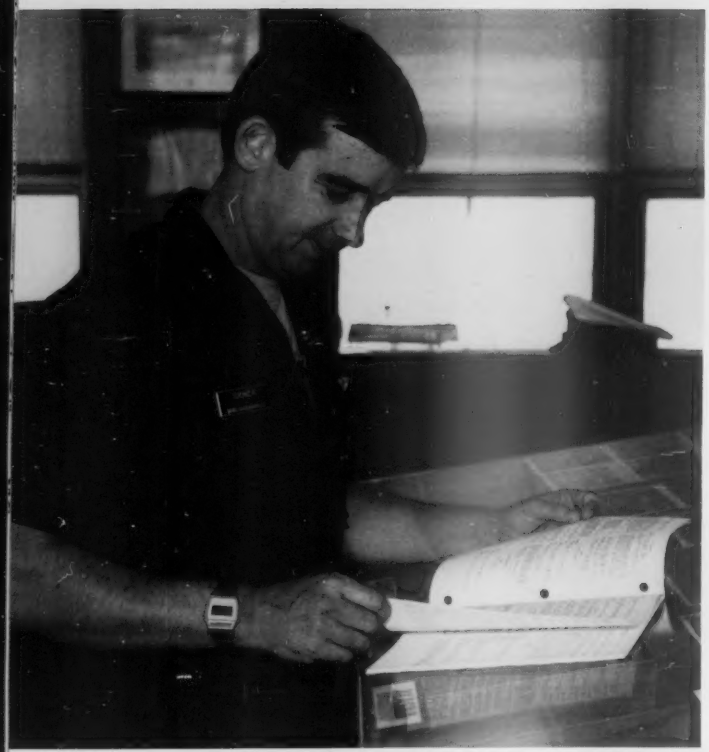
As the lead made his second run to release his remaining ordnance, he advised his wingman to use a low-angle dive with a manual release to try and drop the remaining bomb in a noncomputed mode. After the lead had dropped the rest of his ordnance, the wingman rolled in on a shallow (5 to 7-degree), low-angle dive delivery. He initially had trouble acquiring the target due to smoke and dust in the air from the previous explosions. When he finally located the target, he was nearing the release point. He depressed the bomb release button two or three times, without success. Then, he decided to try the aux jett switch (*on the same run*) to release the hung store.

Instead of selecting the aux jett switch, he inadvertently depressed the salvo jett button. All stores attached to parent racks (two TERs and an Aero 1D) were jettisoned into the target area. Transit to and landing on board the CV were uneventful.

This mishap resulted because the wingman tried to do too much too soon. By attempting to both manually and aux jett the hung store during the same run, he placed himself in an overloaded situation. Pilot tasking at the moment he decided to aux jett the bomb was extremely high. He was concerned about a low pull and frag pattern and could only afford to shift his scan from outside the cockpit for a fraction of a second.

In that split second, he inadvertently directed his finger to the wrong switch. Had he been prudent, he would have aborted his run and set up another delivery using the aux jett. His stated reason for not aborting was that he'd have held up others waiting to get into the target area. This reasoning led to a *special delivery*, costing the Navy two TERs and an Aero 1D droptank.

Don't forget the Class II NOTAMs!



By LCDR Robert L. Rachor, Jr.
VP-23

THE WHAT? The Class II NOTAMs. They come in the mail. Your squadron flight or navigation officer probably posts them somewhere in your flight planning area. Base Operations also has a copy. If you rummage through the pile of pubs in the flight planning room, you'll probably find them. Then again, you might not be able to find them, and you may have to ask where they're stored.

Class II NOTAMs are primarily of interest to those who operate into a civilian airfield. The second section, however, contains items applicable to all aviators. The first section contains selected notices (which are expected to remain in effect for an extended period) and National Flight Data Center (FDC) NOTAMs. FDC NOTAMs mainly reflect changes to approach procedures, establish flight restrictions, and correct data on aeronautical charts. The second section contains special notices pertaining to a variety of flight safety items.

The publication should be reviewed during preflight planning. OPNAVINST 3710.7 directs pilots to check NOTAMs during preflight; it does not exempt Class II NOTAMs. If you're not planning a flight to a civilian airfield, you can comply by reviewing the special notices. There's some nice-to-know information in this section of the pub. For example, a recent issue discussed the Hazardous Inflight Weather Advisory Service (HIWAS) now operating within the Jacksonville and Miami ARTCC areas. This service has been available since 9 September 1981. A check of this NOTAM will explain why you no longer receive direct controller broadcast of SIGMETs in these areas and how you can go about receiving them now. The information in the Special Notices section can be important to the military pilot. In the interest of flight safety, your squadron navigation or flight officer should consider briefing pertinent material from the Special Notices section at AOMs.

If you're flying into a civilian airfield, a check of the NOTAMs in the first section is more than mandatory -- it is essential to your health and well-being. An example from a December 1981 flight will illustrate. The flight was scheduled into Groton/New London airport. Nothing out of the ordinary appeared in the IFR Supplement, but the Class I NOTAMs (teletype) indicated that the tower was closed. The pilot noted a UNICOM frequency in the IFR Supplement and checked the Airman's Information Manual (AIM) to review procedures. The UNICOM frequencies listed in the two pubs matched. The procedures called for broadcasting intentions when entering downwind and on final. The Class II NOTAMs, however, called for the continued use of tower frequency instead of UNICOM, despite the tower closure. Sure enough, when the aircraft arrived in the area, the other aircraft operating at the field were using the tower frequency to broadcast advisories. It was valuable information since the pilot arrived at night and had one aircraft take off in the opposite direction (Runway 23) 2 minutes prior to his own landing on Runway 5 and had another aircraft on short final to Runway 34 as he rolled final for Runway 5!

As usual, it's important to cover your six. The pilot of a later flight to the Quonset State Airport checked the Class II NOTAMs and found instructions to broadcast on the frequency of the closed tower. When this aircraft arrived in the area, the pilot found the aircraft at the field using the UNICOM frequency. He'd planned the flight appropriately and made the wise decision to provide a backup by turning the UNICOM on a separate receiver. By the way, the present IFR Supplement now incorporates both of these Class II NOTAMs in the remarks regarding radio and navaids for the respective airports. The AIM now also reflects the change.

The thing about Class II NOTAMs is that they apply to operations which we seldom conduct; therefore, they're easily forgotten. They shouldn't be. They may have just the information you need at just the right time. ◄

THE SECRET BENEATH THE BINGO BAGS

By LT P. D. Ward, USN
VP-26

WHILE riding at high altitude on a transit hop across the Atlantic (from NAS Island to NAS Northeast), I was doing some operations review and needed to look at some specific publications. After searching briefly, I decided the pubs might be hiding in a briefcase at the bottom of a pile of carry-on baggage consisting of Bingo bags, nav bags, and several identical briefcases. This pile was smothered by a cargo web in the temporary baggage station of our P-3 *Orion*. I secured the necessary aisle space to unstow the assorted articles, partially dropped the cargo web, and began the hunt.

After removing the first layer of Bingo bags, I detected a very strong and slightly familiar scent, but I couldn't determine its exact identity or origin (other than from the general area of the carry-on baggage). Summoning a crewman, I asked if he could identify the odor.

After he sniffed, his face went ashen. He exclaimed "Lighter fluid!" and called the cockpit via the PA system to douse the smoking lamp. Several crewmembers smoking within 3 feet of the cargo station immediately extinguished their cigarettes. Later, all nonessential aircrew mustered *sans* smokes near the cargo station to aid the crewman and me in passing bags and cases out of the temporary storage space.

Fully one third of the bags were covered with lighter fluid, several of which were completely saturated. The culprit bag was a shaving kit containing a now-empty can of conventional lighter fluid. The bag was claimed by a nonaircrew maintenance technician, who apologized profusely. The smoking lamp remained out for the remainder of the flight, although the fumes, which were initially very strong, appeared to diminish within an hour.

I feel smokers should leave their lighters behind and *fly with matches instead*. It seems logical that even while smokers may endanger their health with smokes, they should at least avoid jeopardizing safety of flight by leaving smoking accessories on the ground. Problems have emerged recently – witness the General Use Naval Aviation Hazard Report (USS NIMITZ, May '81) cited in a Naval Safety Center advisory (June '81) concerning an Italian-made butane lighter recharging unit. OPNAVINST 3710.7K prohibits lighters with plastic liquid reservoirs and/or containers for refilling any lighter in naval aircraft. All lighters with butane, propane, or methyl alcohol as a fuel are prohibited aboard naval aircraft by the same instruction. That about leaves only the metal-cased *Zippo*-style conventional lighter or metal-cased substitute suitable for airborne use, and these require support materials. Many smokers have a favorite, monogrammed, metal-cased lighter that "has worked for years, even that time when . . ."

But, hey, can't they leave them on their desks or in their shops next to their personalized squadron coffee cups and fly with matches instead? This may be an added precaution enabling their aircraft to reach its desired destination safely.

P. S. The bag I was looking for was not in that pile of bags and cases! Funny, the things you can discover by accident!

A complete passenger brief includes not only ditch and bailout considerations but also a list of prohibited items. Flammable fluids, livestock, and electronic personal gear which could interfere with airborne navigation systems are taboo. Butane lighters are prohibited on Navy aircraft but permitted on USAF and commercial aircraft (the danger is leakage and a higher-than-expected flame at altitude). Aircrews who travel commercially and check flight gear as stowed baggage should remove pencil flares and signal flares from vests due to high temperatures possible in cargo bays on deck. Hindsight is no substitute for forethought. –Ed. ◄

NOT FULLY QUALIFIED

By R. A. Eldridge
APPROACH Writer

IT would be really nice if the Training Command had enough fleet-experienced pilots to fill every instructor billet. Unfortunately, this is just wishful thinking and will probably never occur. Because of this, many newly-designated naval aviators are drafted for duty as instructors rather than being sent to fleet squadrons. For the most part, these individuals do an outstanding job, as evidenced by the Training Command's consistently low yearly mishap rates. A newly-designated instructor, in addition to teaching students how to fly, is still in the process of gaining flight experience himself, experience which ex-instructors admit comes quickly, when least expected, and at very inopportune times. Once in a while, a mishap occurs which, most likely, could have been prevented if the instructor had been fortunate enough to have had fleet experience following graduation. This is the story of one such mishap.

The mission was a basic instrument training flight at night in a T-28B. The instructor had flown 43 hours since being designated a naval aviator and had a total flight time of just over 200 hours, 30 of which had been flown at night. This was his second student syllabus flight since receiving his interim Basic Instrument instructor qualification. That designation qualified him to instruct BI syllabus hops No. 1-7. He'd flown only 7.7 hours at night since receiving his wings and only 1.9 as the pilot in command (PIC). *As a PIC, he had never made a night takeoff. During the preceding 43 days, he had only made one night landing.*

Following a normal night takeoff, the PIC reduced throttle to climb power. As he glanced out toward the area of the starboard cowling, he noticed what appeared to be "excessive" blue flames from the starboard engine. He immediately transmitted a Mayday to the tower, stating that he had an engine fire and that he intended to land on Taxiway "E." When he thought he was within gliding distance of the field, he shut down the engine by turning off the fuel selector and securing the mixture control. He was then committed to land in a 100-degree, 14- to 18-knot crosswind.

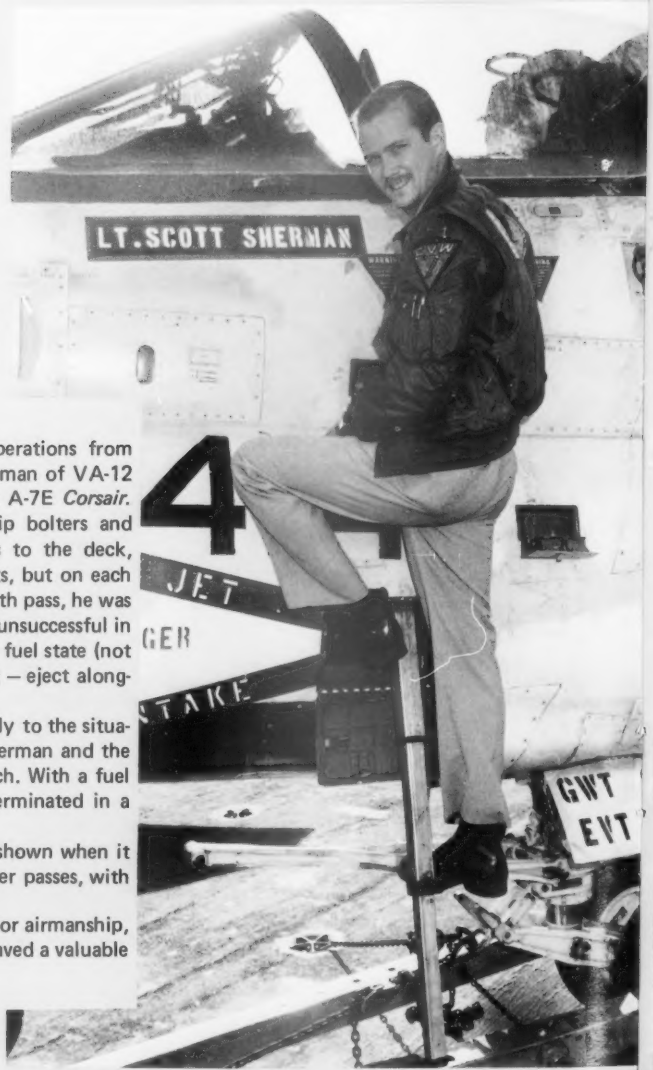
After shutting the engine down, the PIC had trouble determining the location of the taxiway where he was planning to land. The taxiway lights were set on a medium intensity (3 on a scale of 5), and the PIC did not turn on his landing lights. Since he couldn't see the taxiway lights, he was using lights from a nearby parking area to estimate where he wanted to land. His lack of visual references probably contributed to his disorientation and caused him to use a steep angle of bank in an effort to get to the landing area on the taxiway. The T-28 impacted the taxiway in a right wing down attitude during the steep angle-of-bank maneuver. The landing gear sheared, and the aircraft slid 534 feet before coming to rest. Just before the aircraft hit the taxiway, the student blew the canopy. Both crewmembers exited the aircraft uninjured. The aircraft was a strike.

The instructor's inexperience led him to misinterpret a normal situation (blue flame pattern from starboard exhaust stack) to be an engine fire and an immediate emergency. Because of this, he secured a normal functioning engine and placed himself in a position from which he was unable to make a safe deadstick landing. Had he continued to use the engine, which was developing normal power, he could have used the duty runway for landing. However, since the T-28 NATOPS Manual offers only two options for an inflight engine fire: (1) bail out, or (2) secure the engine without regard to the availability of a suitable landing site, he chose the latter, as a lack of altitude legislated against a bailout.

The IP's low flight time, low recent PIC night time, first PIC night takeoff, and only one night landing in the 43 days leading to the mishap are all indicators of his inexperience due to some irregular scheduling practices.

The wing commander had this to say: "The assignment of the instructor to this particular syllabus flight violated every rule of good judgment and common sense in that it failed to account for a lack of sufficient daytime instruction as PIC prior to assignment for night syllabus flights. Assignment of newly-designated naval aviators with low total pilot time to a primary flight training squadron is demanding, but it's precisely for this reason that closer supervision and management of junior instructors is critical and cannot be left to the convenience of Schedules."

As he glanced out toward the area of the starboard cowling, he noticed what appeared to be 'excessive' blue flames...



LT Scott Sherman

AFTER a hook skip bolter during routine night carrier operations from the USS DWIGHT D. EISENHOWER (CVN 69), LT Scott Sherman of VA-12 suspected something was wrong with the arresting hook of his A-7E *Corsair*. The next three night approaches also terminated in hook skip bolters and confirmed his suspicions. He flew three additional approaches to the deck, where toilet paper had been placed under the crossdeck pendants, but on each landing attempt, the aircraft hook skip boltered. After the seventh pass, he was directed to divert to NAS Rota, Spain and tank en route. He was unsuccessful in air refueling, due to a sour store. LT Sherman was down to a 2.3 fuel state (not enough fuel to divert) and had only two courses of action left – eject alongside the carrier or make a night barricade engagement.

The air department and air wing personnel reacted immediately to the situation and rigged the barricade in record time. Meanwhile, LT Sherman and the CAG LSO discussed proper procedures for the barricade approach. With a fuel state of 1.8, LT Sherman started his final approach, which terminated in a successful barricade engagement – the first ever on the IKE.

LT Sherman's coolness and skill under pressure was further shown when it was revealed, after the fact, that he'd flown seven night OK bolter passes, with his final pass being an *OK*.

LT Sherman's positive action, professional attitude, and superior airmanship, coupled with the adept operations of the IKE's air department, saved a valuable aircraft and prevented a costly mishap.

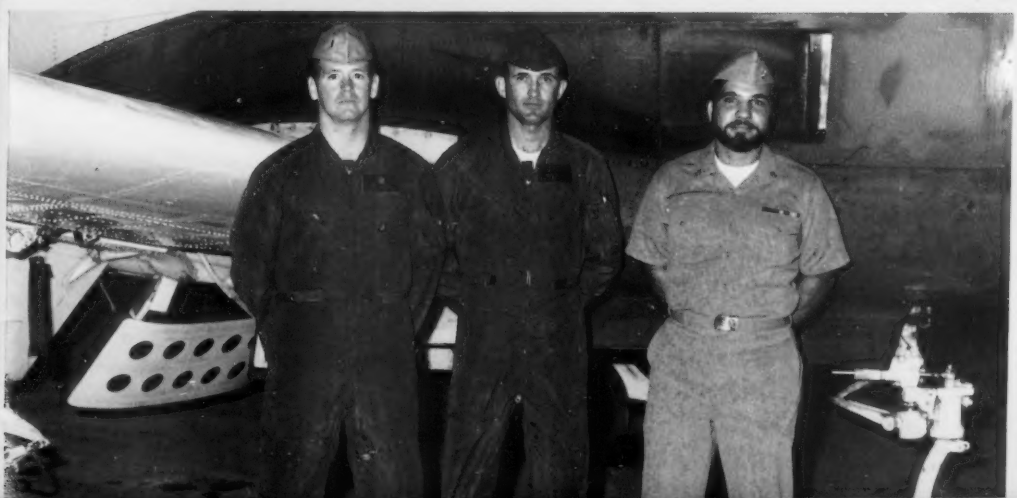
BRAVO ZULU

Capt Neal Vizina
ENS David Cate
ACC Larry Sherman

Capt Neal Vizina, USMC, a T-28B primary flight instructor with VT-6, and his student, ENS David Cate, took off at 1745, 16 March 1982, on a local basic instrument flight. On instrument departure, in contact with Terminal Radar Approach Control (TRACON), they entered an overcast at 600 feet and broke out on top at 2,500 feet. While passing 7,000 feet, the engine RPM and manifold air pressure began to fluctuate and then decrease. They initiated engine failure procedures and tried an airstart. The airstart at first appeared successful, but when power was advanced, the RPM began decaying once again. Power was set at 20 inches for 130 knots, and level flight was maintained. Capt Vizina broadcast a Mayday report to Pensacola Approach.

Chief Larry Sherman, from NAS Pensacola (on temporary assignment to TRACON), was the controller assigned to Capt Vizina's sector. He advised Capt Vizina that his position was 7 miles north of Whiting Field. Since there was a possibility of total engine failure, Capt Vizina decided to attempt a precautionary emergency landing at NAS Whiting Field instead of a straight-in VOR approach. Chief Sherman vectored the T-28 to a position 3,000 feet over NAS Whiting on a heading of 180 degrees. A right turn toward low key was begun. Moments later, Capt Vizina closed the throttle at high key, the engine quit completely, and the aircraft entered the overcast. At a low key position of 2,200 feet, Chief Sherman advised the fliers that they were one-quarter mile west of the airport. Capt Vizina continued his IFR right turn to what he believed to be a 90-degree position at 1,500 feet and was told that he was three-quarter miles north of the airport. Passing 600 feet AGL, he rolled wings level to a heading of 180 degrees. The aircraft was aimed straight for the approach end of closed Runway 18. The first visual contact Capt Vizina had was the flashing red lights of the emergency vehicles in the center of the field. He further aligned the aircraft with Runway 18 and delayed lowering both gear and flaps until approximately 100 feet AGL. ENS Cate blew the canopy just prior to touching down 300 feet past the threshold of Runway 18.

Naval aviation safety requires this type of teamwork, which made the difference between postflight engine maintenance and tragedy. The accuracy of Chief Sherman, coupled with the exceptional aeronautical skills of Capt Vizina, saved a valuable aircraft and prevented the crewmembers and general populace from being exposed to bailout hazards. ◄



Left to right:
ENS David Cate,
Capt Neal Vizina,
ACC Larry Sherman

You don't go down with a sharp, hard fall,
You sort of shuffle along
And lighten your load of the safety code
Till you don't know right from wrong.

A risk of green at treetop level

By Richard A. Eldridge
APPROACH Writer

A HELICOPTER crew sighted the mishap OV-10 pilot, who was then flying straight and level, 250 to 500 feet above the shoreline of Scenic Blue Reservoir. Smiling inside his cockpit, the *Bronco* pilot rocked his wings, and the helicopter returned the salute.

Beneath the OV-10's flightpath, gray, leafless trees shot up from a desolate marsh. The aircraft continued north toward the end of the reservoir until the helicopter lost sight of him.

It must've been hard to judge the altitude above those soft, gray trees . . .

When the OV-10 was 1 hour overdue, SAR efforts were initiated. The SAR helo didn't arrive in time to watch the OV-10 descend below the treetops in a wings-level attitude on a 10-degree glidepath and cartwheel disastrously from the point of first contacting the branches.

Not only that, the SAR helo (which couldn't find the mishap site for nearly 8 hours) never saw the pilot attempt unsuccessfully to eject. He was still in his seat, submerged in the reservoir, a short distance from the main wreckage. Front seat ejection had ceased after his drogue slug had fired. His parachute never had time to open.

I pulled a deal just for the thrill
By flying much too low,
And why not, for I was in a spot
Where no one would ever know.

The pilot knew what he was doing. He'd set the low altitude warning system for 12 feet, a clear indication that the radar altimeter was intentionally made ready for low-altitude flight. In addition, IFF Mode C was turned off, a secondary indication of his intent for low-level flight.

In the past, the pilot was known to have filed numerous "VFR-only" cross-country flight plans. Several unreported instances were discovered in which command personnel had flown with the pilot while he performed maneuvers below published altitude minimums.

On one occasion, the mishap pilot was reported for flying below published minimums in a national monument area. No official violation was filed. Another time, a squadron pilot flying with the mishap pilot had been uncomfortable with low-altitude flight and requested that he climb. After the flight, they had a long discussion about the dangers of low-altitude flight.

The thrill was a rush and it caused a hush
When recounted at the bar,
But I was good and it never could,
For me, result in a SAR.

For some reason, there's an almost fanatical compulsion in some naval aviators to fly at or below treetop level, even though they know that the potential consequences are terminal. And those who indulge in such nonprofessional and suicidal practices are not always nuggets; the urge to satisfy this mania for low flight also affects well-experienced pilots, although it's more the exception than the rule.

I was a senior "O" who was in the know,
Trusted to a "T,"
A department head, so nothing was said
Of overconfidence to me.

The pilot, a well-respected "old guy" and combat veteran with 15 years of naval aviation experience, had soloed the OV-10 to a conference and planned to return to home base later that same day. At lunch before his return flight, he mentioned to two individuals with whom he dined that he planned to fly at 500 feet on his return flight to get a good look at a particular reservoir.

To put into perspective their general attitude about the pilot, one said, "He appeared to have a clear state of mind and impressed me as a dedicated and intelligent naval aviator. He stated that he was going to fly at 500 feet to take a look at the reservoir. To my recollection, I can't remember if he stated *why* he wanted to do this. I feel his overall attitude was very confident and that he was a dedicated naval aviator who loved to fly."

The other luncheon companion said, "He told us his proposed route home was to fly over the pass and then head north. He also said that his altitude would be approximately 500 feet, weather permitting. His attitude and general outlook was that of a man who loved flying and enjoyed his work, his career, and his job location."

My God! I thought, I really ought
To climb for my life to save.
But it was too late, I'd set the date
To be placed inside my grave.

Throughout the history of naval aviation, overconfident pilots have disregarded published minimums, often resulting in death and ruined aircraft. As long as airplanes fly, some pilots will continue to believe that altitude minimums are "beneath" them and were written for everyone else.

Flathatting is a subject about which every naval aviator is well informed, beginning with his introduction into flight training. Despite this, a certain few will always undertake to break the rules when they believe they will not be apprehended. After all, what could be wrong with a few low passes over the old homestead, so long as no one gets your side number? Or a few low-altitude slow rolls? What can go wrong? Plenty! Safety Center files are filled with tragic mishaps resulting from flathatting and other unauthorized maneuvers.

What we've got to do is convince all pilots and crews of the dire consequences that can accompany such actions and stop this needless loss of life and military assets.

Although a rather untenable solution, such a goal might be accomplished if every pilot had to assist in "rescuing" a dead friend from a mishap site.

If this OV-10 pilot were able to send us some lessons learned from the great beyond, we believe that they'd run like this:

So now I'm dead, but you needn't dread
The horrors of the night,
If you'll just be cool and obey the rules
In every phase of flight. ◄

"101, I say

If there were a STOP, LOOK, and LISTEN sign staring him in the eyes, it's doubtful whether this mishap pilot would have heeded it. He was so wrapped up inside the cockpit, trying to indoctrinate his student flight surgeon observer, that his mind momentarily tuned out what was happening on the outside. In defense of the pilot, however, he was going strictly by the book – no Sierra Hotel stuff here.. Unfortunately, he allowed his instructional enthusiasm to obscure his normally efficient ability to hear, see, and act in a proper manner. There's a message for all naval aviators in this tale, so read on!

again, Hold Short!"

By Russ Forbush
APPROACH Writer

IT was nearly 1530 when our PIC met with his fledgling flight surgeon observer for a brief prior to their scheduled H-1 postmaintenance functional checkflight (PMFC). This would be the first flight for the observer as a member of an aircrew, though he'd once flown a short T-34 hop with a Navy recruiter. Because of this, the PIC discussed lookout responsibilities at length, as well as cockpit layout, seat and pedal adjustments, door release locations, use of ICS, flight controls, and emergencies such as fires, hydraulic failure, and autorotations due to engine failures.

The PIC preflighted and downed the assigned H-1 because of an oil leak. The time was now 1630, and only 1 hour remained until sunset. He checked the board for other *Hueys* in need of a PMFC and selected Redbird 101, which required 3 or 4 hours of air time to ensure that griped fire warning system discrepancies had been corrected. The PIC intended to fly 101 only until sunset in order to continue checking the fire warning system and give the observer firsthand experience in rotary-wing flight.

A VIDS/MAF review of 101 revealed a turn chit for oil leaks in the oil cooler compartment, so when the PIC reached the aircraft, he briefed the plane captain to check for leaks during turnup. The observer strapped himself into the left seat while the pilot conducted his preflight inspection. No discrepancies. The pilot then strapped into the right seat, went over his checklists, and started the aircraft. No oil leaks were detected by the plane captain. At 1702, the PIC commenced air taxiing to (duty) Runway 14. Since the observer was new to and very interested in the aircraft, the pilot conducted the outbound taxi as if it were a Fam-1 syllabus flight. He discussed taxi altitude, speed, control pressures and movements, and answered the observer's questions about the use of cyclic and collective controls.

At 1706, the pilot requested and received clearance to the intersection of Runways 9-27 and 5-23 and proceeded along Runway 23 toward the intersection of Runways 23 and 14. From here on in, things begin to liven up. At 1707:05, the PIC requested tower clearance to "cross into Maintenance." He indicated his desire and intention to cross (duty) Runway 14, execute a normal takeoff from a hover paralleling Runway

14 on the southwest side, and then enter the maintenance traffic pattern – a right-hand racetrack oriented along the duty runway at 1,500 MSL. Tower's response to 101's request was "101, hold short." The tower controller was a trainee being monitored by the tower supervisor. The hold short call was given to permit another H-1, Redbird 122, to complete a touch-and-go landing in progress on Runway 14 (at 101's 1 o'clock position). The pilot of 101, unaware of the other *Huey* doing the touch-and-go, responded to the hold short call with "101, thank you." When the instructor pilot in 122 heard this transmission, he immediately took control of the aircraft from his student and began a climbing right turn to avoid a possible collision in the event 101 continued onto the duty runway. The tower supervisor, on hearing 101's reply, directed the trainee to "give it to him again." At 1707:12, the trainee called "*101, I say again, hold short,*" this time in a more emphatic tone of voice.

Almost simultaneously, the pilot of 101 (who by this time had taxied ahead to a point where his main rotor arc extended about 1 foot past the white line marking the northeast edge of Runway 14) was advised by his observer that "there's a helicopter on the right," and the pilot peripherally sensed some movement in that direction.

Startled by what was happening and the revelation that he was beyond a normal hold short position, the pilot applied rapid aft cyclic as 122 passed ahead and above 101 at an altitude of between 150-200 feet.

The rapid aft cyclic caused 101's tail skid to strike the surface of Runway 23 and deflect upward toward the vertical stabilizer. The tail rotor blades then smacked the runway 47 feet from the white line marking the northeast edge of Runway 14. Bouncing back to roughly a level attitude, the aircraft began yawing rapidly to the right. The pilot closed the throttle to flight idle, countered roll and yaw with left aft cyclic, and cushioned the descent with collective. 101 yawed about 270 degrees to the right before hitting the deck and skidding to a stop on a magnetic heading of 140 degrees. The pilot then reported "securing here on the duty" to the tower. The pilot secured the *Huey*, and the crew debarked unhurt. Although the pilot was entirely responsible for this mishap, his handling of the aircraft following tail rotor strike and loss of thrust undoubtedly prevented considerably greater damage and injury.

This mishap is the "creepy" type – the potential for a mishap creeps up on an aviator until he ends up doing something as serious as violating positive control from a tower. Here was a dedicated pilot intent on familiarizing a mighty-interested observer in the intricacies of rotary-wing flight. From the time he first briefed the student flight surgeon until the mishap occurred, he tried to go by the book. His one problem was forgetting to pay attention to the *immediate environment*. He was on ICS so much that he failed to know what the traffic was and hear the transmissions given to him by the tower. He *expected* to be cleared to cross the duty runway, and that's what he thought the tower transmitted. Both tower transmissions were loud and clear. They were understood by the instructor pilot in 122, and when he heard the pilot of 101 say "thank you," he took his aircraft from the student and hightailed it out of there.

This mishap should serve as a reminder to all aviators that one of the biggest cockpit distractions around the airfield is too much gab on the ICS. A missed transmission can mean the difference between a safe flight and a mishap. While there was no midair collision involved in this mishap, the potential was there. To the old axiom "see and avoid," don't forget to add **listen** as well. ◄

He expected to be cleared to cross the duty runway, and that's what he thought the tower transmitted.

PHC A. R. Hill

"Electrified" A-6

By LTs Dave "Cleveland" Brown and
Charlie "Hooter" Hautau
VA-65

IN Ben Franklin's day, only wayward kites and possibly a stray balloon journeyed into stormy skies. In today's all-weather community, however, flying through an occasional rainshower is commonplace. What's not commonplace is the subject of the following article.

It started with a routine brief for the type of hop that makes an all-weather attack type's mouth water – two A-6E TRAM aircraft, with 10 live Mk-82s each, for night bombing at Avgo Nisi target, a small island (more exactly, a large rock) northeast of Crete. Weather was acceptable but included scattered thunderstorms and rainshower activity in the operating area.

The No. 2 aircraft launched and held at a prebriefed rendezvous point until the lead *Intruder* called over tactical frequency, informing them he was down on deck and that No. 2 was to proceed independently. Number 2 pushed out for Avgo Nisi and completed the 125 nm trip in good time, deviating just once for a large thunderstorm.

The night was black as the inside of a piece of coal, with no moon, and surrounding rainshowers blotted out the starlight. The *Intruder's* radar revealed no substantial storms over the target and no ships in the area. The crew had briefed for five runs where they'd drop two bombs in salvo during each run. About 25 nm from the target, they descended to 1,500 feet AGL to set up for a system straight-path attack. The next two runs were similar deliveries (high-speed, level runs), using the A-6E radar and FLIR (Forward Looking Infra-Red) sensor, followed by 4G break turns upon weapons release. Rainshowers jumped into the way, but the pilot was able to maintain VMC underneath during most of the pattern.

The fourth run was to be a low-angle, general-loft delivery. Although heavy rain was encountered inbound, the target was still visible to the B/N on FLIR, and the crew pressed on. A 20-degree loft was executed, and bomb release was successful. The pilot initiated a hard-climbing, 60-degree AOB turn to downwind. As the aircraft entered a large cloud that had moved into the target area, the B/N could no longer track the target and looked up.

At that instant, both crewmembers experienced a brilliant light and a loud boom as a bolt of lightning appeared to explode on the *Intruder's* refueling probe.

Both crewmembers were momentarily blinded by the sudden blast. After recovering, the crew worked hard to maintain control and fly out of the cloud. Although the indicating system which would show an erroneous attitude was damaged and inoperable, they recognized inaccurate cues on the attitude system and accomplished a partial-panel recovery with the B/N switching to the secondary attitude reference. The latter proved to be reliable, and the A-6E leveled off at 9,000 feet on top. Under the dim light of a still-glowing refueling probe (the glow continued for about a minute after the lightning strike), the crew went over PCL procedures for a damaged aircraft. A quick check revealed that the FLIR/laser

unit was inoperative and the INS had "dumped." (Postflight maintenance revealed that the FLIR screen and Top Deck Relay were ruined.) The remaining Mk-82 was jettisoned safely in the target area.

The "electrified" A-6 then returned overhead USS SHIP, where the duty KA-6D conducted an external inspection that revealed no visible damage. A normal recovery was conducted, though several associated electrical system failures were observed during the approach (i.e., speedbrake indicator, no wheels warning light).

Some lessons learned during this flight:

- "Lightning never strikes twice in the same place" is a fallacy. This was the *second* time the B/N had been in an aircraft that was involved in a lightning strike.
- In both cases, the aircraft had entered rain and was attempting to climb VFR on top. Avoid *climbing* into *any* rain cloud, no matter how innocent it appears.
- The inclement weather was not apparent on radar until it was too late, since the thunderstorm was above the aircraft. A clear radar picture is *no guarantee* that there isn't anything to worry about.
- As always, aviate first, then solve your problems.
- Once the aircraft is determined to be safely flyable, if possible, have someone look it over to ensure there's been no external damage.

In summary, "any weather, any time" holds true for both delivering bombs on target and being heads-up for just such a mishap. Don't fool with Mother Nature! ◄

"Eject! Eject!"

By CDR Bill Switzer III, Commanding Officer, VF-24
and
LTJG Dave Baranek
VF-24

WE all hope no one ever has to execute this command, but you know as well as the next aviator that it can happen. If it does happen, will it happen to you? If so, will you be ready?

Through numerous aviation survival courses and readyroom sea stories, you've probably heard a lot of unbelievable tales on how some aircrews almost slipped the earthly bonds permanently (but somehow miraculously survived). If you paid attention, then some of these thoughts probably crossed your mind:

How did he know when to eject?
Will I know when to get out?
Will I react and do everything right? and finally,
I'll survive, or I wouldn't be in this business.

Like most TACAIR operations, our flight was interesting, exciting, and a valuable training evolution. It was especially memorable, however, for the way it ended, with a split-second decision to eject and still survive.

We'd flown a great hop that afternoon in the Indian Ocean, starting with a 2 vs. 2 radar intercept and finishing with a short 3 vs. 3 DACM mission. Leading a *Tomcat* three-plane formation into the Case I break, we were first in the pattern and on the ball. It was a good pass to a hook-skip 3-wire, catching the 4-wire.

The initial arresting gear deceleration felt normal for the first 30 knots, then decreased to less than optimum resistance. Upon the first indication that something was wrong, I focused my attention to the edge of the angle deck and was thinking about trying to get the F-14 airborne off the angle, accept the settle, and hope for ground effect. Approaching

the normal final rollout point and still estimating sufficient speed was available to attempt to fly the F-14, a sudden deceleration occurred from about 80 knots to 30 knots, and we both thought the *Tomcat* was going to stop. About 40 feet from the edge of the angle deck, we heard a loud pop and felt the aircraft deceleration forces decrease again. **It was time to get out!!**

Still being forward in the seat, out of optimum ejection body position, and trying to fly the F-14, I gave the command, "Eject! Eject!" over the ICS. With quick reflexes and a full awareness of the situation, the RIO, LTJG Baranek, was mentally prepared and reacted without hesitation. (The No. 4 arresting gear had been improperly set, causing the arresting gear to be two-blocked and the purchase cable to part on both sides simultaneously. The F-14 took the cable over the side. Luckily, there were no flight deck personnel injuries.)

From witnesses' accounts and a review of the PLAT tapes, we learned that the canopy left the aircraft shortly after the F-14 left the angle. The RIO's seat fired as the aircraft started a sink rate with a slight left-wing-down and nose-down attitude, 40 feet above the water. He got a three-quarter chute and one swing before water entry. My seat fired as the aircraft hit the water with 15 degrees left-wing-down and 20 degrees nosedown attitude and about a 600 fpm sink rate. I experienced seat/man separation at water impact and then skipped along the surface. The only injury to the aircrew was a small, compressed fracture of my back.

I recall breathing underwater without any difficulty while submerged about 5 to 10 seconds (I was wearing the old A13/A mask). Both Martin-Baker (MK GRU-7A) ejection seats performed flawlessly. Our LPU-24A/P with FLU-8A/P automatic devices worked as advertised. LTJG Baranek's LPU activated upon water entry and kept him afloat. Mine inflated shortly after water entry and brought me to the surface. I was only semiconscious while underwater, and I wonder now if many other aviators have been in the same situation and drowned because they were not fortunate enough to have had the automatic inflating device, FLU-8A/P.

Just because you survive the ejection doesn't by any means guarantee you that you've made it and will survive. Three items in this ejection were working for us thus far: our timely decision to get out, the Martin-Baker MK GRU-7A ejection seats, and the FLU-8A/P automatic inflating device. Now, it was really up to the aircrew to go to work and try to survive.

Immediately, we both started performing the game plan procedures we'd acquired from reading about other experiences, listening to sea stories, participating in aviation survival training courses and, most important, Deep Water Environment Survival Training (DWEST).

The HS-8 SAR helo was overhead almost instantly, and the "angel's" pilots quickly assessed the situation. They went to me first, got a thumbs-up, and then went to LTJG Baranek. Both of us were within 150 feet of each other.

Recalling where aviators have drowned/vomited with their masks on, we removed the masks right away.

Realizing we were near the carrier (100 feet) and that chutes can drag aircrews down, we released the Koch fittings.

Remembering aircrews often get tangled in their shrouds, I attempted to back away from the lines and chute. I had two lines around my legs but didn't have any problem getting clear. LTJG Baranek, however, as observed by the helo, was swimming amidst his chute and shroudlines, which were starting to spread toward the vortices of the carrier's wake. After numerous attempts to paddle away from his chute and shroudlines, and realizing he was getting more entangled, LTJG Baranek elected to use the shroud knife.

Seeing the RIO's trouble, the SAR helo, instead of delaying the rescue attempt (30 to 45 seconds) by lowering a swimmer, decided to lower the horse collar to speed his recovery. LTJG Baranek immediately grabbed the horse collar, and the helo started lifting him out of the water and away from the ship's vortices. Now 5 to 10 feet above the water, LTJG Baranek and his chute were drawn away from the ship's wake, and he was eventually able to cut himself free. Once free of the chute, LTJG Baranek was lowered back into the water, away from his chute and the carrier's wake, so that he could put the horse collar around himself in the proper method. His hoist aboard was normal.

For me, the SAR crewman jumped into the water, checked me over, attached the horse collar around me, and we were both hoisted safely aboard.

Now that we've washed the saltwater out of our flight gear, we feel some lessons we learned bear repeating.

- Be up "hot mike" below 5,000 feet in multicrew aircraft and on all landings.
- Ensure your harness is locked on all landings.
- Be familiar with your LPU survival gear and know where every item is located. Have you ever tried to find your survival items with an inflated LPU? (Safety officers, this may be a good test for the aircrews.)
- Low-altitude overwater ejections may disorient you to the point when your Koch fittings may be hard to locate, especially at night. If in doubt, start at the shoulders and work your way out to find them.
- Don't give a thumbs-up until you are absolutely positive your LPU is inflated and that you are free of your chute and shrouds. Why waste valuable time? Also, it means that you're okay. How many stories have you heard where the aviator gave a thumbs-up one minute and the next he was gone?
- Don't be so concerned about your partner; you probably can't help him anyway. *You* have a survival situation, so execute your game plan. Once you are 110 percent sure everything is okay, then look for him.
- Follow the SAR swimmer's instructions. They too are professionals and know their job. Have confidence in the SAR crew and let them perform.
- Gloves? I don't wear them for carrier landings or cat shots. I also found it very easy to locate everything and didn't waste time having to take them off. The RIO had gloves but with holes worn in the fingertips. Once in the water, he took them off.
- Glasses? The RIO retained his glasses throughout the ejection sequence, even with visor up.

Execute your game plan.

Hopefully, after reading the ideas in this article, you'll have further developed your own ejection plan of attack. Prepare yourself well in advance. That way, if the time ever comes, you too will have a flawless survival situation to write about. ◄

Into the storm's blue eye

By LCDR Rory H. Fisher
Air Operations
USS JOHN F. KENNEDY

WE were in the Indian Ocean, and it was the last cyclic event of the day, with a scheduled recovery at 1745. Fourteen aircraft were coming back to our carrier from various training and operational missions during bluewater operations. The

weather was 2,000 broken, 5,000 overcast, 6 miles visibility in rainshowers, and had been marginal VFR most of the day, with launches and recoveries varying from Case I to Case III.

As a standard operating procedure, airborne aircraft were calling in PIREPS in order to determine the best recovery course and operating area. Sunset was at 1820. The last recovery was beginning to Marshal around 1710 for the final Case III of the day. Everything looked good until the visibility began to decrease from 6 miles to about 3 miles ahead of the ship.

As the first aircraft pushed out of Marshal, the air boss called down to Air Ops and said that, although visibility was decreasing rapidly and rain had begun to fall, he hoped we'd be able to trap a few aircraft before we went IFR. While gathering personnel in Air Ops began looking at the PLAT screen showing the rear of the ship, the sun slid behind the clouds.

When the first aircraft was reported at 3 miles, visibility had decreased even further, to 1 mile in moderate rainshowers. CATCC reported that they were losing video on their radars due to the heavy rain. As the first aircraft called the ball, he was just visible from the ship. The rain was driving down even harder now. As he approached the ramp, he went a little high and the result was a bolter; the first of many "adventures" had begun. Due to heavier rains, visibility decreased to near zero now, until the ramp itself was barely visible.

A "99er" went out to all aircraft to turn on their taxi lights. The second aircraft was at three-quarters of a mile, and still there was no sight of the ship as the LSOs took over and began their talkdown. Result? Waveoff. The next aircraft was talked down by the LSO, and as he trapped, a heavy sigh eased the tension in CATCC.

At this time, many important decisions were being made. All three remaining KA-6 tankers were manned immediately, and a sister carrier some 80 to 100 miles away that had just completed flight ops was alerted to a possible emergency situation. She responded with a preparatory ready deck and a promise of alert tanker assets, if needed. Meanwhile, the next aircraft boltered, and the second stack out of Marshal was given a precautionary Delta. Three more aircraft waved off without seeing the ship (although they were just visible from the LSO platform). Finally, another aircraft trapped after being talked down all the way by the LSO.

Another key decision now had to be made – whether or not to continue with the landing attempts or regroup and try to find a hole in the weather. With seven aircraft in the modified bolter pattern and CATCC radars unreliable inside 3 miles due to the intense rainshowers, the decision was made to allow two more passes. If unsuccessful, we'd remarshal all aircraft, launch all remaining available tanker assets, and try somehow to find a break in the weather. It was now rapidly approaching nightfall, and the pucker factor was rising as darkness descended.

The next two attempts would unnerve even Rod Serling. One aircraft was just visible as he swept no less than 20 feet right down centerline and executed a missed approach. The

pilot never saw the ship. The next aircraft attempting to land found the same results: "no sight of the ship."

Three KA-6 tankers and a helo were immediately launched to try and find a hole in the weather. The CATCC team quickly assessed airborne fuel assets and succeeded in establishing aircraft in Marshal again.

An Air Force KC-135 that had been tagging along for practice inflight refueling most of the afternoon (and no longer had a full bag of fuel) was held by CATCC in order to give 6,000 pounds of fuel to F-14s and A-7s. Meanwhile, the helo was searching for a "clear" area. All airborne aircraft were now becoming fuel critical, and it seemed as if we were losing ground. Just about as fast as the fuel could be pumped, it was being burned. There were 3 to 4 aircraft being vectored to each tanker in clearer areas 20 to 30 miles from the ship.

Then the word came from the helo – there was an area 4 to 5 miles south of the ship where the rain was light and visibility was 2 to 3 miles. The area was approximately 10 to 12 miles in diameter. With all dispatch, the carrier hurried to the proper course, and two aircraft were immediately vectored to intercept final bearing as the ship broke into the clearer area. The aircraft were visible from 3 miles and executed a "normal arrestment." As the first aircraft hit the deck, all others started out of Marshal, since fuel states were getting low again. Only one tanker remained available now, and the KC-135, dried, had departed.

The rest of the 17 aircraft came to rest on the flight deck without incident. The helo, with 30 minutes of fuel remaining, was the last to recover, at 1950, some 2½ hours after the ordeal had begun.

I learned many things from this experience, and my esteem for the men I work with and the ship/air wing team rose a hundredfold. During the entire evolution, communications between CATCC controllers, aircraft, LSOs, and Primary were calm and professional – in every respect, ops normal. Although everyone was deeply concerned about the situation, timely and inventive decisions were made calmly and clearly, setting a decisive course of action based on all the available information. The teamwork that we strive for between Air Ops, Primary, Bridge, Air Wing, Flight Deck, and the LSOs all came together that night and crystallized as never before. Had any one link broken down or failed in the team effort, that night could well have been one we'd all try to forget for the rest of our lives.

Many possible decisions could have been made (there's nothing procedurally "in the books" about situations like these). Experience and common sense dictated a course of action. Teamwork and professionalism in every respect was what made those decisions correct. ◄

Three spins and a

By LT G. D. Saul
HSL-34

THOSE hazard reports always seemed so impersonal and detached to me – those bits of terror and sorrow snatched from events surrounding someone else's near-mishap seldom meant very much. "The copilot lifted the aircraft into a hover with the No. 1 ECL in IDLE," the story read, except this time, the story was about me.

After that auspicious beginning, the story goes something like this. The aircraft settles back to the deck as it loses turns while yawing to the right. Momentum carries the aircraft over the flight deck edge into the nets, and the H-2 begins to nose over and head for the water. The startled HAC realizes what has happened and slams the No. 1 ECL into FLY. The surge of power and extreme collective position cause the H-2 to spin and twist out of the nets and do a triple 360-degree rotation about its vertical axis before control is restored . . .

The spectacular chain of events just described, and the subsequent landing back on the ship, accounted for less than 15 seconds of my young life. Since then, however, the aftermath, soul-searching, and reliving of the experience have occupied a considerable amount of my time. I think it would be useful to examine all the "little" things which led to the near-mishap and, also, to discuss some of the personal things which happen during experiences like mine. Yes, now it had become personal and very close to home – it had happened to me.

First of all, what led to that very nearly fateful (or fatal) takeoff? Our mission for the day was to move passengers and

a mattress landing

parts between our SPRUANCE-class DD and the ship we were relieving (another DD-963 class). My HAC (who was making his second cruise to this part of the world) and I were fairly comfortable with the task at hand. After all, I was an old utility pilot (H-46), and he was a veteran of an *entire* cruise with a LAMPS detachment (this was my first HSL cruise, however). The weather presented no problems, and except for having to fly ASE-off for want of an ASE amplifier, our aircraft was in good shape.

A number of transfers had been made between the two ships without any problems, except for the normal confusion which often accompanies logistics operations. The trips were relatively quick, deck-to-deck evolutions – almost like touch-and-go operations. After the sixth or seventh landing (on Homeplate), the chain of events which led to the incident began. Fuel was becoming somewhat of a factor at this point, and we were told that we'd have to remain on deck for some time, waiting for our next load of passengers. A few minutes turned into 15 or 20, and "someone" from the tower suggested that an engine be placed in IDLE to conserve some fuel. (I've since learned that this "fuel-saving" technique is nothing more than a well-circulated wive's tale.) The HAC moved the little lever to the IDLE position, and we continued to turn on deck for 10 to 15 more minutes.

This particular action has become the first of many freeze frames which have come to haunt my psyche. This was the first interruption in our normal routine – an aberration which I'm reasonably sure I would have corrected later, had I performed the original action.

Obviously, the little lever was not returned to its proper home, and the rest is history, as the saying goes. There are still more small details and freeze frames, however. Now, back to the flight deck.

After our wait on deck, interspersed with deliberations concerning refueling on our own deck or on the deck of the other ship, we finally boarded our human cargo (one officer) and "forced the moment to its crisis," so to speak. We hurriedly had the chains removed, received green deck from the tower, and started our takeoff. Freeze frame No. 2! Our little friend, the engine condition lever, was not in its proper place. We hadn't reviewed and completed the BEFORE TAKEOFF CHECKLIST. (Actually, we hadn't even begun Step No. 1: "ECLs in FLY.") Although this was an inexcusable and unexplainable action, there are factors to be explained.

What should have looked abnormal on the gauges and felt strange on the controls looked and felt very much like our other takeoffs that day. A torque indicator problem in which No. 1 torque always indicated low (even with matched N_g and T_5) made one of our primary performance gauges on takeoff appear normal. Our ASE-off condition and the requisite winds allowed a normal-feeling takeoff, even with one engine at idle power.

After I heard "Things look good, let's go" from the HAC, I began to slide right and maneuver for forward speed. Turning the nose of the aircraft out of the wind caused us to lose our obviously tenuous hover. The aircraft settled and yawed right, and we hit the deck. Forward momentum carried us over the deck edge, and our mainmounts entered the safety nets. Needless to say, I was doing an Arnold Schwarzenegger act with my collective at this time. The HAC realized what was happening, mumbled something about "I can't believe I did that" over the ICS, and rammed the ECL into its proper place. When engine RPM caught up with rotor demand, we simultaneously spun and twisted out of the nets and began a series of 360-degree gyrations next to the ship's starboard side.

The next 30 to 40 seconds of flight seemed to last an eternity, and I've dreamed about them and relived them countless times. During each 360-degree turn, as we spun precariously close to the ship's side of the *Sea Sparrow* launcher, I felt a strange combination of emotions. Yes, my life passed before my eyes; I thought of Mom and Dad, Sis, the girl back home, all of those good old American things, but with each spin, I also felt a sense of disappointment and terror-filled anticipation. If I was going to hit, then let it be done. Of course, all of my instincts and pilot reactions were causing me to struggle for control.

My ability to write this article attests to the fact that we did regain control, and our trusty *Sea Sprite* was not too much the worse for wear. The only visible damage was a dangling right mainmount caused by a sheared liquid-spring hinge pin. Now, I was faced with landing on bad gear after an obviously harrowing experience.

The decision was made that we would land on a stack of mattresses secured to the flight deck. I was a bit apprehensive about this maneuver (as I think most helo pilots are), because I had never done it before and I was unsure of how the bird would react. The landing was uneventful, however, and I think I can safely say that landing on mattresses is not something one should worry about (although our gear was only minimally damaged).

I don't think I need to enumerate all of the lessons from this experience. Let it suffice to say that the hackneyed old saws about following NATOPS, performing checklists, and taking time to do things right are still quite applicable. I escaped from this one with little more than some hard-learned lessons and numerous nightmares. I'm also sure I converted one surface warfare officer (my passenger) into a nonbeliever in helicopter transfer.

There's one final freeze frame – a pleasant one, which has stayed with me as long as those nightmare visions. Our ship was serving steak for lunch that day, along with strawberry shortcake for dessert. I guarantee you that it was the best lunch I've ever had. ◄

One and one-half miles away, the tower controller has seen the flash of your ejection and watches in disbelief as your Corsair disappears into the shoreline.

Dirty night bingo

By LT Colin Sargent

YOU'RE flying an A-7E *Corsair* in the middle of an idle descent to 1,200 feet MSL, just 4 miles from the approach end of your divert runway. One hundred and nineteen miles behind you is the carrier, far offshore, where everyone in CATCC is on edge, waiting. You're 2 miles from the numbers now, at 900 feet and showing 200 pounds of fuel remaining.

You're never going to make it. A master caution light (fuel boost No. 1) flickers on after you turn to a modified base for a landing on Runway 22. Next, the No. 2 fuel boost light illuminates. A couple of chugs later, your engine flames out and starts to wind down. It's absolutely black outside. Airspeed is 125 knots. You turn slightly away from the field, level your wings, transmit a Mayday, and pull the lower ejection handle just before decelerating to rudder shaker. You see the flash from the rocket motor and then feel the seat tumble a few times before seat-man separation. At this point, you're parallel to the beach. When the parachute opens, you look up and . . .

Let's hold that chute open for a few seconds. How did you get here, and why are you descending into the dark splashes below, 50 yards from shore and within sight of your runway?

One and one-half miles away, the tower controller has seen the flash of your ejection and watches in disbelief as your *Corsair* disappears into the shoreline. He looks at his watch and writes the time down on a flight strip. "2018." He's activated the Fresnel lens, runway lights, and put the short-field arresting gear in battery for nothing. Grabbing a telephone, he starts the SAR effort.

Meanwhile, the cold, January waves are rising steadily toward you, and you think about the events leading up (or down) to your present state of mental suspension. This has been your first carrier deployment, and you've only been on board for 10 days. You remember how the flight began . . .

Everything looked beautiful as you launched for the night war-at-sea strike. Rendezvous with the other members of the strike went as planned. While zooming inbound to the target, at 1805, a master caution symbol appeared in the HUD, and you noted a hydraulic pressure caution light while observing PC-2 pressure to be zero.

After informing your strike leader (Moonraker 501) of the problem, he told you to detach from the formation and hold overhead at 10,000 feet. Fifteen minutes later, when the strike was over, Moonraker 501 climbed up and joined with you to discuss emergency procedures and landing options:

"The option of inflight refueling's out of the question, because your refueling probe can't be extended with a PC-2 system failure. Once your gear and flaps have been blown full down by the emergency method, they're hydraulically and mechanically locked and can't be raised without PC-2 pressure. Normal and antiskid braking aren't available, and utility brake accumulator pressure's going to deplete in 19 minutes."

Now, your fuel state was 5.9 (thousand pounds). After you told the Marshal controller of the PC-2 failure, he directed

you to climb up to angels 17 at 32 DME.

Because of your emergency, Marshal was going to put you on ice at 17,000 feet and recover you last (it was the carrier's logical policy to hold PC-2 failures until last because of foul deck time required to pin the aircraft, shut it down, manually raise the arresting hook, and tow it clear of the area).

Concerned, your strike leader intervened in your behalf:

1846:36	501	*"And Marshal, 501."*
	MARSHAL	*"501, Marshal."*
1846:36	PILOT 501	*"Make a recommendation to bring 502 down first, ah, because there, he'll be (garbled)."*
	MARSHAL	*"501, say again."*
1846:54	501	*"Roger, this is 501, I would like 502 to come down first, ah, once he's dirtied up, he's committed to a dirty Bingo."*
1847:04	MARSHAL	*"01, stand by."*
1847:53	MARSHAL	*"501, unable, ah, 502 is last, sir."*
	501	*"Roger that."*
1849:42	MARSHAL	*"502, ah, Marshal, what DME did you wish to dirty up?"*
1849:50	502	*'I'd like about 15, please."*
	MARSHAL	*"Roger."*
1849:57	502	*"And make that 20 if possible, Marshal, for 502."*
	MARSHAL	*"502, roger."*
1854:45	502	*"Marshal, 502, could you get a squadron rep in CATCC, please?"*
	MARSHAL	*"502, say again."*
	502	*"A squadron rep in CATCC."*
1854:54	MARSHAL	*"502, roger, stand by."*
1855:27	MARSHAL	*"502, ah, you having any other problem besides your PC-2 failure?"*
	502	*"Negative."*
1855:36	UNK PILOT	*"What's your state, 502?"*
	502	*"4.8."*
	UNK PILOT	*"Say again."*
1855:42	502	*"4.8, and I compute my dirty Bingo to be 4.1."*

Almost out of breath, the squadron rep you asked for (who was from your sister *Corsair* squadron) arrived in CATCC and began figuring your Bingo to your primary divert, NAS Faraway, with variables of 150 nm, gear and flaps down, drag of 250, and *no wind*. He didn't consider wind in the calculation because he felt no accurate winds were available, though CATCC had been using a running figure of 60 to 70 knots. The status board Bingo distance was 119 nm and, in choosing 150 nm, he figured in an (inadequate) 31 extra miles in order to take winds into account.

The problem is, 20 minutes earlier, while you were in suspended animation at 17,000 feet, CATCC had been informed of *exact headwinds* to the primary divert field by an airborne E-2! Consider these transmissions:

1833:20	PILOT 502	*"Marshal, 502-502 is in holding, ah, state five niner."*
	MARSHAL	*"Understand 502 is in holding, state five point nine."*
1835:35	MARSHAL	*"Primary divert bears 272/130, Bingo fuel follows: F-4, 4.4; A-7, 2.4; A-6, 4.2; EA-6, 4.9; E-2, 3.6."*
	SKYPIE 012	*"Revise your Echo 2. That's no wind, and there is a super nosewind going in."*
	MARSHAL	*"Skypie 012, understand that all headings are to the primary divert."*
1836:20	SKYPIE 012	*"That's affirm, they are directly to the primary diverts. We're figuring a minimum 200 to 300 extra pounds if you use the divert."*
	MARSHAL	*"Ah, roger, can you give me, ah, those winds again for those various altitudes?"*
1836:33	PILOT 012	*"Okay, right now at 16,000 we are showing 90 knots, 280, and at 20,000, earlier, we were showing 110 knots at 280, and understand at 13,000 feet, they were 280 at 60 knots."*
1837:10	MARSHAL	*"Roger, I will pass that on."*
1837:14	MARSHAL	*"012, do you have an estimate what the headwinds are?"*
1837:15	012	*"At 15,000 feet they're 90+ knots and anticipate about 60 to 80 at 10,000 and about 120 at 20,000."*
1837:28	UNK PILOT	*"And 60 knots at 13,000."*
	UNK PILOT	*"Roger, 13,000, 290."*
	MARSHAL	*"Roger."*

Continued

In any case, using the 31-mile "safety factor" for winds, the squadron rep wound up with a Bingo figure of 4.2, coincidentally close to your (also incorrect) 4.1. Additionally, the air operations officer (also A-7 experienced) confirmed the 4.2 calculations.

Next, they contacted the Captain, and everyone agreed that you, in Moonraker 502, because of your low fuel state and possible Bingo, should attempt to land right away, and if you boltered, you'd have just enough fuel to stretch out a Bingo to NAS Faraway. By the way, you'd flown for over 30 minutes on a declared low fuel state while this decision was being contemplated.

You were then told to descend from angels 17 to angels 1.2, dirty up, and commence the approach. Here's how it went from the 3-mile mark:

1911:09	FINAL	*"502 is three, well below glidepath and on course."*
1911:41	FINAL	*"502 is 2 miles, you're going, correction-centerline is slightly left, you're drifting right, you're holding well below glidepath, you're coming up now, slightly below."*
1911:51	FINAL	*"502 on glidepath and on course."*
1912:04	FINAL	*"502 is going slightly below glidepath, centerline is slightly right."*
1912:10	FINAL	*"502 is up and on glidepath."*
1912:11	FINAL	*"One mile."*
1912:18	FINAL	*"502, you are on glidepath, centerline slightly right, correcting, ¾ mile, call the ball."*
1912:22	502	*"502 Corsair, ball 4.2."*
	LSO	*"Roger ball, Corsair, about 36 knots."*
	LSO	*"Catch it."*
1912:40	LSO	*"Power."*
	LSO	*"Little power."*
1912:47	LSO	*"Bolter, bolter."*
1912:49	APPROACH	*"502, take angels 1.2, you're cleared downwind, report abeam, heading 180."*
1912:56	502	*"502."*
1913:00	APPROACH	*"502, your signal is Bingo, flaps up, hook up, climb passing angels 2, go button 14."*
1913:11	APPROACH	*"Pigeons 273/131."*
	502	*"502."*
1914:29	502	*"Departure, Moonraker 502 on a Bingo."*
	DEPARTURE	*"502, roger."*
1914:36	502	*"I'm unable to raise flaps, ah."*
	DEPARTURE	*"Roger."*
1915:38	DEPT. (REP)	*"502, ah, rep."*
	502	*"502."*
	REP	*"Okay, did you turn the switch off, and, ah, your flaps are in the ISO position?"*
	502	*"Affirm."*
	REP	*"They didn't come up at all?"*
1915:53	502	*"Negative."*
1915:55	REP	*"Roger that, climb to 25 grand and, ah, start your (dirty) idle descent out about 35 miles."*
	502	*"Ah, roger."*
	REP	*"And it's a trap on the long runway. If you miss the trap, you'll probably have about 1,200 pounds of gravy when you get there."*
	502	*"Roger."*

Interestingly, the LSO who boltered you didn't know you had only one chance to land before you had to Bingo, because the sound power phones in the LSO platform weren't operating. Why weren't they operating? That's a good question . . .

It's been a tough Endurex, and your schedule for the last 3 days proves it. Still, that's what carrier operations are all about. Two days ago, you took a NATOPS and a TACMAN exam, and later that night, you briefed, preflighted, and manned an aircraft in preparation for a night bombing hop, but the hop wasn't launched. Yesterday and today looked like this:

0945	*Got up and showered*
1045	*Assumed duties as SDO*
1200	*Soup and salad for lunch*
2055	*Briefed for a night SSSC hop*
2115	*Ate dinner, cheeseburger and fries*
2225	*Launched on hop*
0130	*Returned from hop*
0145	*Ate snack and went to bed*
0700	*Got up and went to readyroom*
0835	*Briefed for CAP Mission*
1010	*Launched on hop*
1215	*Returned from hop*
1300	*Showered and ate lunch*
1510	*Briefed for war-at-sea hop*
1721	*Launched on hop*
1805	*PC-2 failure, held overhead ship*
1901	*Commenced approach to a bolter, dirty bingo to where you are right now*

Where are you? You're still descending beneath your parachute, and it seems as if you'll never hit the water. What was it the squadron rep said as you were already committed, 70 miles in the middle of nowhere, at 19,500 feet, with a state of 1.8?

He said, "You don't have enough gas to get to NAS Faraway." The words had frozen down the length of your spine. Those 1,200 pounds of fictional "gravy" didn't taste so good anymore.

En route to this point, your doppler was reading just 97 knots of groundspeed, but you'd disregarded it as not only unreliable but unbelievable! You now wish you'd used your tactical computer to read IMS groundspeed (data 95), and TACAN for a basic time-and-distance groundspeed check. You did call up NAS Faraway in data 89 for time to go, but when you saw the time was ridiculously long, you eliminated it from your consideration because you thought it erroneous. No one could go that slowly!

You don't have enough gas to get to NAS Faraway. Now, the ship began efforts through the airborne E-2 to get a closed airfield, NAS Nearer (a little), to open up for an emergency landing. At 2004, the ship ordered you to land at NAS Nearer whether its lights were on or not! Luckily, at 2008, NAS Nearer did open, and at 2016, you reported the field in sight with virtually no fuel remaining.

Obviously, everyone's Bingo calculations were wrong, but how were they wrong? The squadron rep did his best, but he was fully as tired as you were (the whole ship was tired from the Endurex). He'd had little sleep in the past 72 hours, and he'd flown five hops, just completing the fifth prior to running up to CATCC as the squadron rep. His admitted tiredness was possibly a factor in the errors he made in calculating Bingo fuel required. Naturally, he was under great "invisible" pressure to perform his calculations relatively quickly.

(Days later, with the wisdom of hindsight, other pilots will sit down at a long green table, with coffee cups all filled, and taking every variable into consideration, including wind, meticulously arrive at the **correct figure of 5.8.** Of course, this will be done without the rush and urgency of carrier operations.)

Why hadn't you done better? You'd just finished training at the RAG, and you were new to the squadron. When the 4.2 figure nearly matched your 4.1, it was a comforting lounge chair to rest upon. This was your first Bingo, and you hadn't done many Bingo fuel calculations without relying on your PCL. The tables in your PCL *did not* take wind into account (A-6, F-14, and E-2 PCLs did have wind correction factors, but A-7 PCLs didn't carry the information until after your mishap), and therefore, your estimated Bingo fuel didn't sufficiently allow for wind, either. If only you'd believed your doppler enough to at least cross-check its figure of 97 knots with groundspeed information from data 95, not to mention a good old time and distance TACAN check, and used data 89 for time to go to destination!

Perhaps most importantly, you wish you'd made more of a nuisance of yourself. If only you'd been calling your position and fuel remaining all the way to divert (it's easy for controllers to momentarily "forget" about you when they're thrust right in the middle of a recovery sequence!). *At one point in your Bingo, there were 20 minutes of silence between you and the ship!* If you had any doubts about the way things were going, you might have been more forceful in letting the whole world know about your current emergency status.

You've flamed out with the runway in sight.

Of 568 Bingo-related incidents since the beginning of CY-75, there have been 17 mishaps, one death, and no injuries. Of 34 A-7 Bingos resulting from PC-2 failures (CY-70 and subsequent), seven mishaps have occurred, resulting in two aircraft destroyed and no death or injuries. Of seven dirty Bingos, two have resulted in mishaps, and one aircraft has been destroyed, the one in the water below you.

At last, you and your chute are descending into the water. Koch fittings, shroudlines, liferaft, you perform your survival steps perfectly. Soon, a boat will come alongside and take you to shore, where a crowd is gathering. People are waiting to hear how you became the flash they saw in the night sky, and you quietly decide to help every pilot you'll ever meet to better prepare for his first dirty night Bingo.

You're never going to forget that flash . . . ◄

Take it around!

"TAKE it around!" the instructor shouted to the student naval aviator when he realized that their TA-4J had failed to engage the short-field arresting gear.

Silence.

Hadn't the SNA in the front cockpit heard the transmission? Realizing that the SNA wasn't taking the desired action and the aircraft was starting a slight right drift, the instructor took control and went to MILITARY power for a go-around. But it was too late. The drift was rapidly increas-

By Richard A. Eldridge
APPROACH Writer

ing, and the instructor decided to abort the go-around. He reduced power to IDLE and then lost control of the TA-4 as it skidded and hydroplaned down the wet runway.

He didn't engage nosewheel steering until departure from the runway appeared imminent. That moment of truth quickly arrived. By using nosewheel steering, the IP prevented the aircraft from departing the runway, but in so doing, he caused the TA-4 to tip up onto its left wingtip, left mainmount, and nose. The aircraft plowed down the far left side of the runway on its wingtip and nose. In all probability, the damage would have been limited to those two areas if the left mainmount had not tripped over a runway light and its concrete base. This contact, combined with momentum and the TA-4's high center of gravity, caused the *Scooter* to roll inverted.

The mishap aircraft was the third in a flight of three to return to home base from a weapons training flight. The first two aircraft landed easily. At the time, a thunderstorm, moving north at 18 knots, was over the field. While on GCA final, the IP received a report of runway conditions as "braking action fair, standing water on the runway." Because of this, he elected to make a short-field arrestment. With the SNA at the controls, final approach and touchdown were on glide slope, on speed, and on centerline. After touchdown, the SNA maintained approach power in concert with the control stick position used for landing attitude. (This is in accordance with the TA-4 NATOPS for a short-field arrestment.)

Use of Hot and Cold Mike. Throughout the evolution, both the IP and SNA had "cold mike" selected on their respective ICS panels. After GCA touchdown, the controller was still transmitting information at the time of the IP's command to "take it around." ***Information transmitted to pilots by controllers after the aircraft is on the runway is untimely and unnecessary.*** In this instance, it may have interrupted the communication between the IP and SNA at a most critical moment of the flight.

Because both pilots were on "cold mike," it required each to key the ICS button on the throttle to communicate. OPNAVINST 3710.7K states: "In high-performance multicrew jet aircraft, the pilot's ICS should be selected to the "hot mike" position in aircraft so equipped for all takeoffs and landings." The decision to remain "cold mike" was not only contrary to General NATOPS, but in view of making an actual instrument approach to a short-field arrestment with wet runway conditions, it was also imprudent. It may have contributed to the SNA's failure to respond to the IP's command to "take it around."

TA-4 Go-Around Capability. Since approach power setting was maintained after touchdown, deceleration must have been minimal at the time the IP noted the right drift. (With approach power maintained after touchdown, the TA-4 will slow approximately 7 knots in the first 1,000 feet of rollout, and waveoff capability remains excellent at that point. The aircraft will become airborne in less than 5 seconds after military power is added.) The go-around capability was still there.

Automatic Centering of Nosewheel Steering (NWS) System. The TA-4 is equipped with an automatic centering feature of the NWS system. When the tailhook handle is lowered, the nosewheel is electrically and hydraulically centered. It will not caster freely as the aircraft tracks down the runway. Airframes Change (AFC) 626 removes this centering feature from the NWS system. (The mishap aircraft did not have AFC 626 installed.)

There have been several mishaps relating to this particular centering feature. Since the nosewheel is hydraulically held centered and will not caster, normal aerodynamic directional control is severely hampered because the aircraft will not respond to rudder inputs until the input is so great that the aircraft literally rotates around the nosewheel and enters a skid or hydroplane, from which recovery is extremely doubtful. No matter how accurately maintenance personnel center the nosewheel, the aircraft cannot be expected to track perfectly down the runway. Other factors, such as crosswind, difference in tire pressures, and pooled water, will induce the aircraft to eventually drift off the centerline.

NATOPS discussions of short-field arrestments and wet runway landings make no reference to the lack of controllability while rolling on the runway with hook down and nosewheel hydraulically centered.

If a TA-4 rolls any appreciable distance on the runway with the hook down, the only chance of directional control is use of NWS, which overrides the automatic centering feature. The TA-4 NATOPS recommends against using NWS at high speeds, however, since the sensitivity of NWS can lead to loss of control if not carefully applied.

Knowledge of Automatic Centering Feature. Several experienced instructors have been questioned about their knowledge of the automatic centering feature of the NWS system with the hook down. They've agreed that there's a general unawareness of the controllability problem, and as a result, a recommended NATOPS change concerning reduced controllability in TA-4 aircraft without AFC 626 incorporated has been forwarded to the appropriate authority. ◄

LETTERS

Thoughts From the Starboard Delta

Cubi Point, PI – Having just read "Water Survival Ordeal" in your MAR '82 issue, I feel everyone should be impressed with the efforts of the survivor. As one of the rescue helo pilots who picked him out of the water (and it's not my intention to reiterate how great helos are), I'd like to jump up on the soapbox and add my two cents' worth.

I'm a first-tour pilot with training in search and rescue techniques. What about you fixed-wingers? What will you do when your buddy flying wing has to pull the magic handle? During your next AOM, why not kick the question around for discussion. In this particular mishap, there were four other A-4s around, and they did the right thing – they let the world know something was wrong. They remained on station until low fuel made it necessary to return to base, leaving the survivor out there alone. No sweat, though, since they had a good TACAN cut, 265 degrees/107 DME from NAS WESTPAC. (At FL280, that's no problem, but my trusty *Sea King* struggles to reach 12,000 feet!) Incidentally, we lost TACAN at about 21 DME after climbing to 5,000 feet to improve reception. Approach control lost us about 40 miles out . . .

It isn't stated in the article, but the survivor had turned off his URT-33 so that Guard wouldn't screech like the sound track of an Alfred Hitchcock thriller. (Don't forget that somewhere at the bottom of the ocean is a PRC-90.) Thus, using UHF(ADF) was out of the question this time. No biggie, though, because the UHF(ADF) receiver in the helo didn't work anyway.

Fortunately, three other A-4s launched and began searching for the survivor. Try locating a raft 100 miles out to sea. Thanks to the survivor's signal mirror, he was found. Are you familiar with the mirror's operation? *In this instance, the instructions washed off the back as the survivor was reading them!*

Once the A-4s found the survivor, one went to High CAP to act as a communications relay, and the other two went low to circle the survivor. Enter two helos, a P-3, and now everybody wants to talk. Radio discipline is a must if any information is to get to the right people. Somebody has to be in control, running the show! Also, several aircraft using the same call sign tend to become confusing. Tactical call signs (nicknames) help to eliminate the confusion.

Rescues in-close, near the Starboard Delta pattern, are usually easy. At other times, a coordinated effort is necessary, where spontaneous teamwork is the name of the game. Take a few minutes to imagine yourself as part of the team. Think about what you would do. Your efforts may ensure there's somebody there to rescue.

LT Mike "Eugene" McCarthy
VC-5

The Word From Martin-Baker

Norfolk, VA – On behalf of Martin-Baker Aircraft Company, may I draw your attention to a minor discrepancy in Russ Forbush's fine article, "M.A.S.H. II," in your MAY '82 issue.

The ground-level ejection seat demonstrated at NAS Patuxent River on 28 August 1957 was made *before* the F9F-8T lifted off the runway and not, as reported, "flying just above the ground." This demonstration was the first ground-level ejection accomplished in the United States.

Also, the quotation from Eloise Engle's book, *Escape*, that appears in the excellent article by Richard Eldridge ("The Road to Zero Zero," JUN '82) is incorrect.

The world's first runway ejection was accomplished by Squadron Leader J. Fifield, R.A.F. (Ret.), in England on 3 September 1955. Flying Officer Hughes, R.A.F., made the first ground-level ejection in the United States on 18 April 1957.

John Boughey
Martin-Baker Field Service Representative
COMNAVAIRLANT

Radar Advisories

Point Mugu, CA – I believe that the following quotations from the Airman's Information Manual should be brought to the attention of the author of "No Time for Traffic Calls" in the APR '82 issue of *APPROACH*:

- Under *Radar Traffic Information Service*. "(The controller's) reason against providing or continuing to provide the service in a particular case is not subject to question, nor need it be communicated to the pilot. In other words, the provision of this service is entirely dependent upon whether the controller believes he is in a position to provide it."
- Under *Clearance*. "When weather conditions permit, during the time an IFR flight is operating, it is the direct responsibility of the pilot to avoid other aircraft, since VFR flights may be operating in the same area without the knowledge of ATC. Traffic clearances provide standard separation only from IFR flights."
- Under *See and Avoid*. "When meteorological conditions permit, regardless of type of flight plan, whether or not under control of a radar facility, the pilot is responsible to see and avoid other traffic, terrain, or obstacles."
- Under *Traffic Advisories*. "(Pilots) should not expect to receive radar traffic advisories on all traffic. Some aircraft may not appear on the radar display. Be aware that the controller may be occupied with higher priority duties and unable to issue traffic information for a variety of reasons."

I could find nothing in the Airman's Information Manual suggesting that pilots of IFR aircraft will be advised when "high workload" conditions may preclude the issuance of all traffic advisories. When air traffic control frequencies become saturated in terminal areas, it's obvious to all pilots that radar advisories are not to be expected.

CDR William Rakowski, USNR

● We wholeheartedly agree. In the Air Break, our intention was not to say that air traffic controllers aren't doing a great job, but to underline a pilot's responsibility to see and avoid, whether he's in radar control or not.

Buffalo Calls

Columbus, OH – After reading "Paddles Contact" by LCDR Dizzy Gillespie in your MAY '82 issue, I'd like to offer my views. Having been a squadron, RAG, and CAG LSO with 14 consecutive years of VAL experience, I feel that I can speak with some knowledge.

I applaud *APPROACH* and LCDR Gillespie for telling it like it really is. Numerous carrier landing mishaps have resulted from poor communications between pilots and LSOs. Too many times, LSOs fail to adequately debrief a pilot on exactly what was meant by a call, because the pilot was given a nonstandard call.

While we should always adhere to the LSO NATOPS, there are times when standard calls fail to elicit a response from the pilot. Every air wing has its "buffalo call," and I'm glad to see it finally recognized in print. While we never want it to become the norm for a landing, there are certainly times when the call is necessary to trap an aircraft. Conversely, many times, this can be relied upon too often and becomes the normal call on every night recovery due to LSO pride in being able to "catch 'em" and pressure from the captain, CAG, air boss, or CATCC to increase the boarding rate.

Even though it isn't in the book, if we use a procedure routinely, we should accept it and discuss it openly. Communication is the key to the LSO/pilot team, and it's refreshing to see an old taboo being discussed honestly in such a widely-read magazine.

CDR Jerry Knott, USN
NROTC, Ohio State

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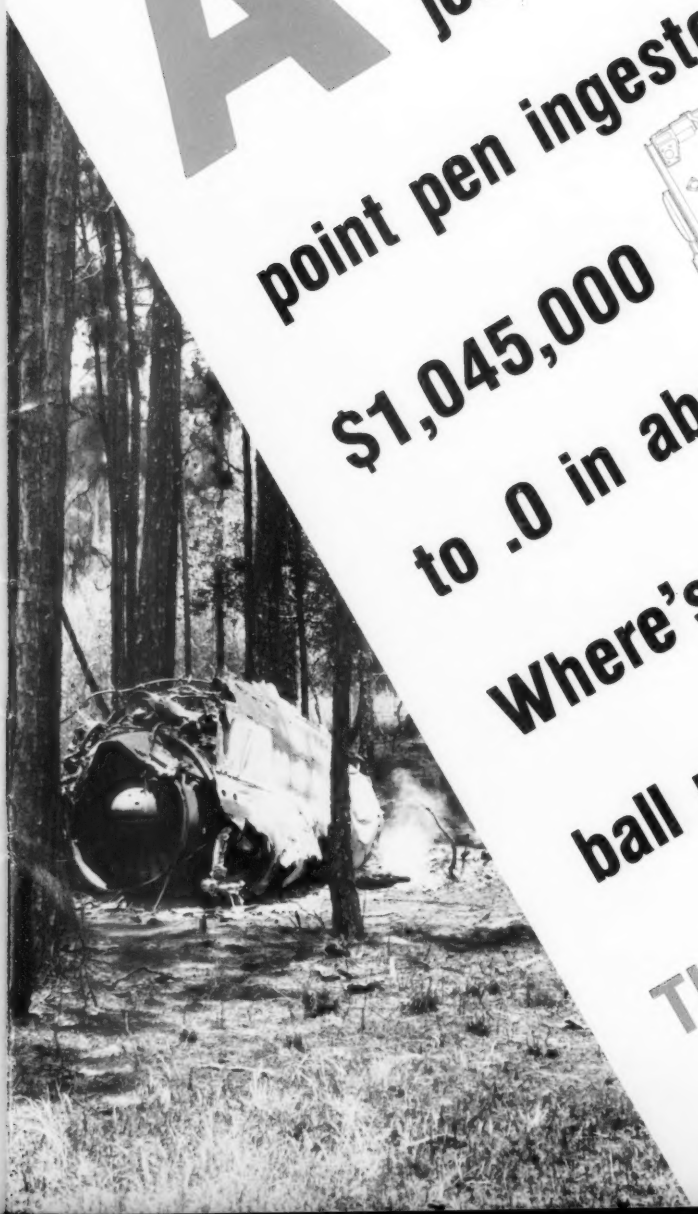

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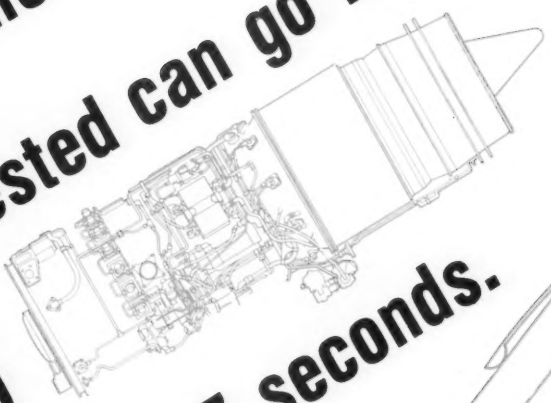

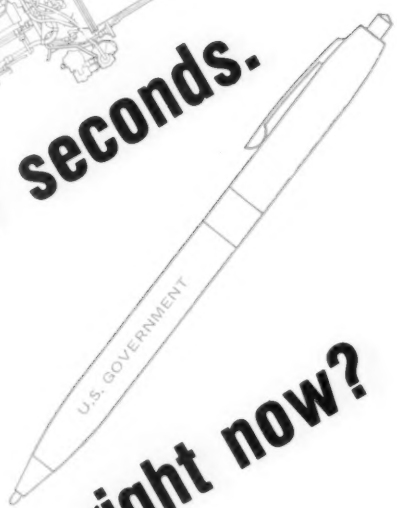

Where's your ball point pen right now?

THINK ABOUT IT.

Poster idea contributed by USS RANGER (CV-61).

Naval Safety Center
NAS Norfolk, Virginia

TEAMWORK?

you can bet your life on it!

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